Nikon

Communication Unit

UT-1

User's Manual Version **2**

Users of D4-series, D800, D800E, D7100, D7000 cameras should instead refer to one of the following manuals.

D4-Series, D7000	*Communication Unit UT-1 User's Manual* (supplied with the UT-1)
D7100	*Communication Unit UT-1 Manual for Users of D7100 Digital Cameras* *
D800, D800E	*Communication Unit UT-1 Manual for Users of D800/ D800E Digital Cameras* *

* Available for download from the websites listed on page xiii.

En

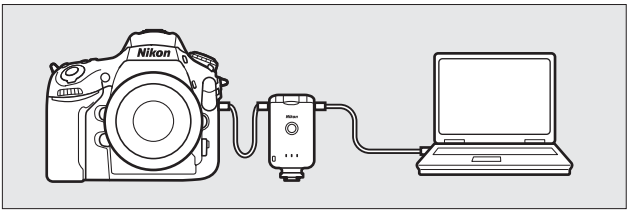
What the UT-1 Can Do for You

This manual describes how to connect to a network and upload pictures to a computer or ftp server or control the camera remotely using Camera Control Pro 2. Use the UT-1 to connect to Ethernet networks, or connect to wireless networks by attaching a WT-5 to the UT-1.

Before connecting the UT-1, confirm the firmware for the camera and UT-1 have been updated to the latest version. For more information, visit the websites listed on page xiii.

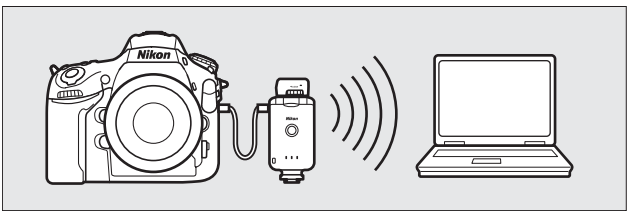
Before using the UT-1 network function, connect the camera to a network.

Ethernet Networks



For information on connecting to a computer, see page 15.
For information on connecting to an ftp server, see page 57.

Wireless Networks

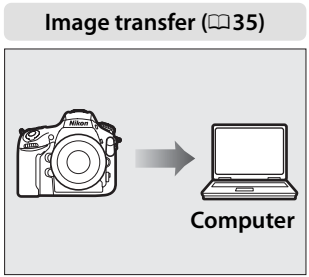


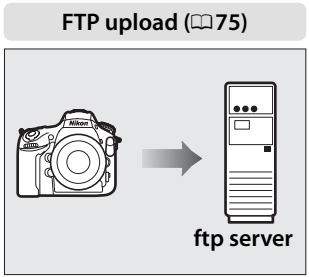
Connect to wireless networks using a WT-5 wireless transmitter (📖6).

For information on connecting to a computer, see page 23.
For information on connecting to an ftp server, see page 64.

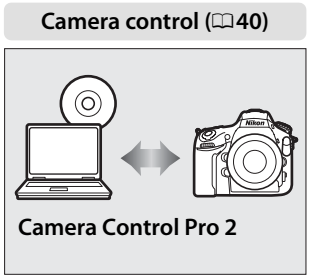
Once a network connection has been established, you can:

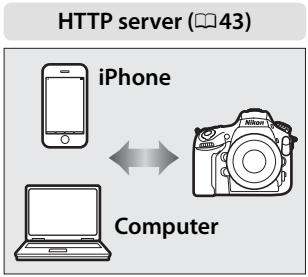
Upload existing photos and movies





Take or browse photos remotely





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For Your Safety

To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them.

The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol:

This icon marks warnings, information that should be read before using this Nikon product to prevent possible injury.

❑ WARNINGS

⚠ Do not disassemble

Failure to observe this precaution could result in fire, electric shock, or other injury. Should the product break open as the result of a fall or other accident, disconnect the camera power source and take the product to a Nikon-authorized service representative for inspection.

⚠ Cut power immediately in the event of malfunction

Should you notice smoke or an unusual smell coming from the equipment, immediately unplug the AC adapter and remove the battery, taking care to avoid burns. Continued operation could result in injury. After removing the battery, take the equipment to a Nikon-authorized service representative for inspection.

⚠ Do not use in the presence of flammable gas

Failure to observe this precaution could result in explosion or fire.

⚠ Keep dry

Do not immerse in or expose to water or rain. Failure to observe this precaution could result in fire or electric shock.

⚠ Do not handle with wet hands

Failure to observe this precaution could result in electric shock.

⚠ Do not handle the power cable or go near the charger during thunderstorms

Failure to observe this precaution could result in electric shock.

⚠ Keep out of reach of children

Failure to observe this precaution could result in injury.

⚠ Avoid extended contact

Do not remain in contact with the camera, communication unit, battery, or charger for extended periods while the products are on or in use. Parts of the product become hot; leaving the product in direct contact with the skin for extended periods may result in low-temperature burns.

⚠ Observe proper precautions when handling batteries

Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product:

- Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged.
- Use only batteries approved for use in this equipment.
- Do not attempt to insert the battery upside down or backwards.
- Do not short or disassemble the battery.
- Do not expose the battery to flame or to excessive heat.
- Do not immerse in or expose to water.
- Replace the terminal cover when transporting the battery. Do not transport or store with metal objects such as necklaces or hairpins.
- Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.
- When the battery is not in use, attach the terminal cover and store in a cool place.
- Immediately after use, or when the product is used on battery power for an extended period, the battery may become hot. Before removing the battery, turn the product off and allow the battery to cool.
- Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation.

⚠ Do not expose to high temperatures

Do not leave the device in a closed vehicle under the sun or in other areas subject to extremely high temperatures. Failure to observe this precaution could result in fire or in damage to the casing or internal parts.

⚠ CD-ROMs

The CD-ROMs on which the software and manuals are distributed should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment.

⚠ Follow the instructions of hospital and airline personnel

This product emits radio frequency radiation that could interfere with medical or navigational equipment. Turn the product off during takeoff and landing and when so directed by airline or hospital staff.

Notices

- No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.
- Nikon reserves the right to change the specifications of the hardware and software described in these manuals at any time and without prior notice.
- Nikon will not be held liable for any damages resulting from the use of this product.
- While every effort has been made to ensure that the information in these manuals is accurate and complete, we would appreciate it were you to bring any errors or omissions to the attention of the Nikon representative in your area (address provided separately).

This product, which contains encryption software developed in the United States, is controlled by the United States Export Administration Regulations and may not be exported or re-exported to any country to which the United States embargoes goods. The following countries are currently subject to embargo: Cuba, Iran, North Korea, Sudan, and Syria.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Notice for Customers in the U.S.A.

❑ *U.S.A. Federal Communications Commission (FCC) Declaration of Conformity*

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

CAUTIONS

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Nikon Corporation may void the user's authority to operate the equipment.

Interface Cables

Use the interface cables sold or provided by Nikon for your equipment. Using other interface cables may exceed the limits of Class B Part 15 of the FCC rules.

Notice for Customers in the State of California, U.S.A.

WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. ***Wash hands after handling***.

Nikon Inc.,

1300 Walt Whitman Road, Melville, New York

11747-3064, U.S.A. Tel.: 631-547-4200

Notices for Customers in Canada

CAUTION : This class B digital apparatus complies with Canadian ICES-003.

ATTENTION : Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

Notices for Customers in Europe

❑ *Symbol for Separate Collection in European Countries*

This symbol indicates that electrical and electronic equipment is to be collected separately.

The following apply only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.
- Separate collection and recycling helps conserve natural resources and prevent negative consequences for human health and the environment that might result from incorrect disposal.
- For more information, contact the retailer or the local authorities in charge of waste management.

Notice for Customers in Thailand

This telecommunication equipment conforms to NTC technical requirements.

Table of Contents

What the UT-1 Can Do for You ii
For Your Safety v
Notices vii

Introduction 1
Parts of the UT-1 2
Attaching the UT-1 4
Connecting the WT-5 6
Supported Network Functions 7
Workflow 9

Transfer, Control, and HTTP 15
Ethernet Connections 15
Step 1: Connecting the Equipment 16
Step 2: Configuring the Hardware for Ethernet Connections 18
Step 3: The Connection Wizard 18
Step 4: Pairing 21
Wireless Connections 23
Step 1: Readying the Equipment 25
Step 2: Enabling a Wireless Connection 26
Step 3: The Connection Wizard 26
Step 4: Network Settings 32
Image Transfer 35
Camera Control 40
HTTP Server 43
Computer Web Browsers 49
iPhone Web Browsers 53

FTP 57
Ethernet Connections 57
Step 1: Connecting the Hardware 58
Step 2: Configuring the Hardware for Ethernet Connections 60
Step 3: The Connection Wizard 60
Wireless Connections 64
Step 1: Connecting the Equipment 65
Step 2: Enabling a Wireless Connection 66
Step 3: The Connection Wizard 66
Step 4: Network Settings 72
FTP Upload 75

Menu Guide 81
Choose Hardware 81
Network Settings 82
The Profile List 82
Create Profile 82
Copy to/from Card 83
Deleting Network Profiles 83
Editing Network Profiles 84
Options 87
Auto Send 87
Delete After Send? 87
Send File As 87
Overwrite If Same Name 88
Protect If Marked for Upload 88
Send Folder 88
Deselect All? 88
HTTP User Settings 89
Battery Info 89
Auto Power off Delay 89
MAC Address 90
Firmware Version 90

Appendices 91
Copying Profiles 91
Creating Profiles on a Computer 93
Creating an FTP Server 94
Windows 8.1/Windows 7 95
Windows Vista 103
Manual Profile Creation 110
Troubleshooting 112
Specifications 113
Index 117
Warranty Terms - Nikon Europe Service Warranty 120

Background Knowledge

This manual assumes basic knowledge of ftp servers and local area networks (LANs). For more information on installing, configuring, and using devices in a network, contact the manufacturer or network administrator.

Illustrations

The appearance and content of the software and operating system dialogs, messages, and displays shown in this manual may vary with the operating system used. For information on basic computer operations, see the documentation provided with the computer or operating system.

Camera Controls

Operation varies with the model of camera and may differ from that described in this manual.

Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to ongoing product support and education, continually-updated information is available on-line at the following sites:

- **For users in the U.S.A.**: ***http://www.nikonusa.com/***
- **For users in Europe and Africa:** ***http://www.europe-nikon.com/support/***
- **For users in Asia, Oceania, and the Middle East**: ***http://www.nikon-asia.com/***

Visit these sites to keep up-to-date with the latest product information, tips, answers to frequently-asked questions (FAQs), and general advice on digital imaging and photography. Additional information may be available from the Nikon representative in your area. See the following URL for contact information: ***http://imaging.nikon.com/***

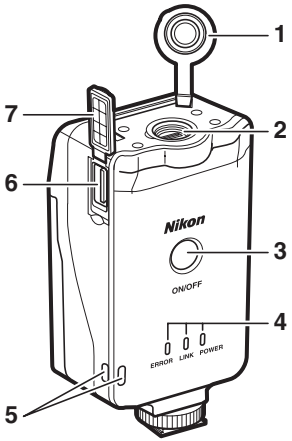
Introduction

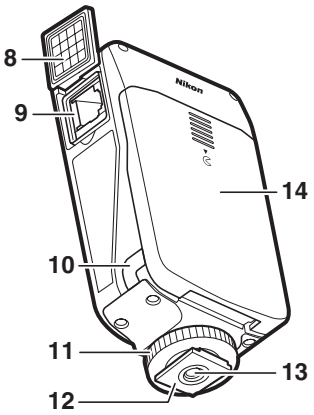
Thank you for your purchase of a UT-1 communication unit for compatible Nikon digital cameras. Please read this manual thoroughly and keep it where all those who use the product can read it.

The following symbols and conventions are used throughout this manual:

	This icon marks cautions, information that should be read before use to prevent damage to the product.
	This icon marks notes, information that should be read before using the device.
	This icon marks references to other pages in this manual.

Parts of the UT-1





1 Peripheral connector cover
2 Peripheral connector
3 Power switch 17, 25, 59, 65
4 Status LEDs 38, 41, 47, 78
POWER (green/yellow),
LINK (green), **ERROR** (orange)
5 Eyelet for strap
6 USB connector 4
7 USB connector cover
8 Ethernet connector cover
9 Ethernet connector
10 Power connector cover
11 Locking screw
12 Feet
13 Tripod socket
14 Battery-chamber cover 9

The POWER LED

When the UT-1 is on, the **POWER** LED glows green to indicate that the battery is fully charged or that an AC adapter is connected. At battery levels below 10%, it will flash green to warn that the battery requires charging. When the UT-1 is turned off, the **POWER** LED briefly turns yellow as the product powers down.

Supplied Accessories

The following accessories are supplied with the UT-1 (batteries such as the EN-EL15 are not supplied):

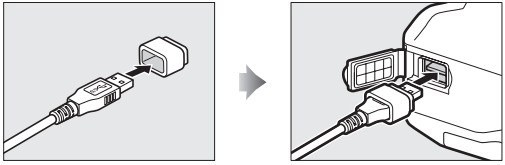
- ❏ *User's Manual* (this manual)
- ❏ Warranty
- ❏ CD
- ❏ Case
- ❏ Communication unit USB cable A (for use with cameras such as the D4 or D7000)
- ❏ Communication unit USB cable B (for use with cameras such as the D800 or D800E)
- ❏ UF3-RU14 USB cable gasket
- ❏ UF-3 USB cable connector cover (for use with D800 and D800E cameras)

In addition, the following accessories are supplied when the UT-1 is purchased as a set with the WT-5:

- ❏ WT-5 wireless transmitter
- ❏ WT-5 *User's Manual*
- ❏ *Going Wireless with a D4 Digital SLR Camera and WT-5 Wireless Transmitter*

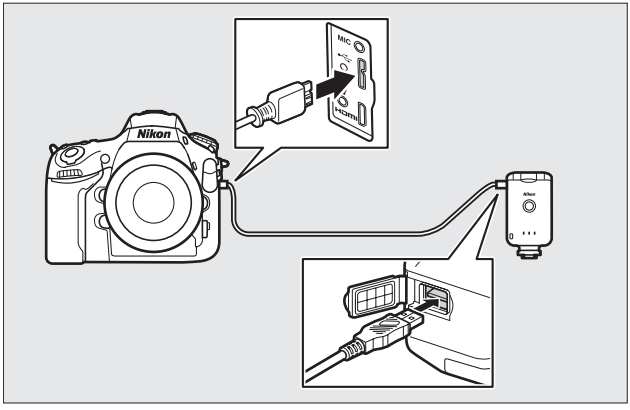
Cable Gasket

When connecting the USB cable to the UT-1, attach the supplied UF3-RU14 cable gasket as shown.



Attaching the UT-1

Connect the UT-1 to the camera using the USB cable designated in the camera manual.

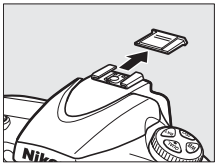


Attaching the UT-1

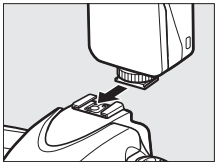
The UT-1 can be mounted on a tripod or the camera accessory shoe. To mount the UT-1 on the camera when a flash unit or other accessory is mounted on the accessory shoe, use an optional SK-7 bracket.

To mount the UT-1 on the camera accessory shoe:

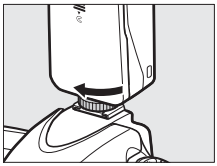
1 Remove the accessory shoe cover.



2 Slide the UT-1 onto the accessory shoe.



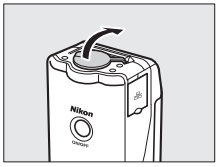
3 Tighten the locking screw.



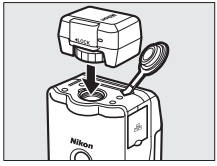
Connecting the WT-5

The UT-1 can be used in combination with the optional WT-5 wireless transmitter to connect to wireless LANs. The WT-5 connects as described below.

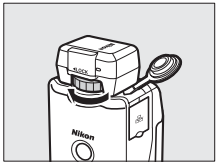
1 Open the UT-1 peripheral connector cover.



2 Fully insert the WT-5 connector into the UT-1 peripheral connector.



3 Rotate the locking wheel to lock the WT-5 in place.



Supported Network Functions

The UT-1 connects the camera to Ethernet and, with the addition of an optional WT-5 wireless transmitter, wireless networks. Photographs on the camera can then be transmitted to a computer ftp server and the camera controlled remotely from a computer. The UT-1 supports the following functions:

FTP upload (🕮75)	Upload existing photos and movies to a computer or ftp server, or upload new photos as they are taken.
Image transfer (🕮35)	
Camera control (🕮40)	Control the camera using optional Camera Control Pro 2 software and save new photos and movies directly to the computer.
HTTP server (🕮43)	View and take pictures remotely using a browser-equipped computer or iPhone.

Before data can be transferred over a wireless or Ethernet network, the camera must be supplied with a *network profile* providing information on the host computer or ftp server.

☑ Choosing a Power Source

To prevent the camera powering off unexpectedly during setup or data transfer, use a fully-charged battery or an optional AC adapter designated for use with your camera. For more information, see the camera manual.

FTP Servers

Servers can be configured using standard ftp services available with supported operating systems, such as IIS (Internet Information Services). Connection to computers on other networks via a router, Internet ftp connections and ftp servers running third-party software are not supported.

Ethernet Connection

No adjustments to wireless LAN settings are required when the camera is connected to a LAN by an Ethernet cable.

HTTP Server Mode

Internet connections are not supported in http server mode.

Routers

Connection to computers on other networks via a router is not supported.

Firewall Settings

The UT-1 uses TCP ports 21 and 32768 through 61000 for ftp and TCP port 15740 and UDP port 5353 when connecting to a computer. Computer firewalls must be configured to allow access to these ports, as otherwise the computer may not be able to access the UT-1.

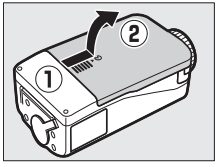
Workflow

Preparing the UT-1

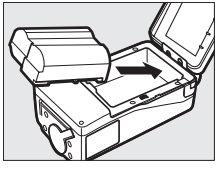
❑ Inserting the Battery

To prevent loss of power during setup or upload, use a fully-charged battery or an optional AC adapter. The UT-1 takes one EN-EL15 rechargeable Li-ion battery; other batteries can not be used.

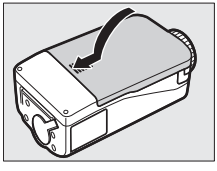
1 Slide (①) and open (②) the battery-chamber cover.



2 Insert the battery in the orientation shown. For safety precautions and information on charging the battery, see the battery and charger manuals.

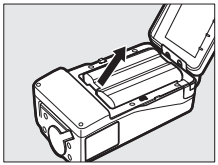


3 Close the battery-chamber cover.



Removing the Battery

Being careful not to drop the battery, open the battery-chamber cover and remove the battery as shown at right.



Stand-By Mode

When disconnected from the camera, the UT-1 will turn off automatically after the delay chosen for **Options** > **Auto power off delay** in the **Network** menu (🕮89), reducing the drain on the battery.

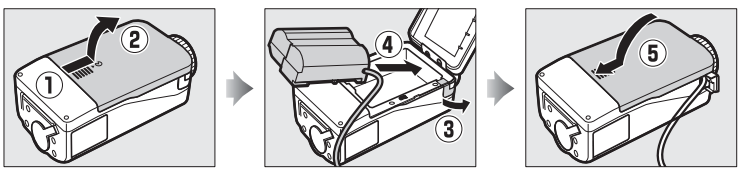
Battery Level

The level of the battery inserted in the UT-1 can be determined by connecting the UT-1 to the camera (🕮4) and checking the battery level using the **Options** > **Battery info** in the **Network** menu (🕮89).

Using an AC Adapter

An optional EP-5B power connector and EH-5b or EH-5/EH-5a AC adapter can also be used to power the camera when the UT-1 is connected. Insert the power connector as shown below.

Open the UT-1 battery-chamber (①②) and power connector (③) covers and then insert the EP-5B power connector in the orientation shown (④). Position the power connector so that it passes through the power connector slot (⑤) and close the battery-chamber cover.



Installing the Wireless Transmitter Utility

This section describes how to install the Wireless Transmitter Utility. The Wireless Transmitter Utility is used to copy network profiles to the camera and is required when configuring the camera for connection to a computer in image transfer and camera control modes (either the Wireless Transmitter Utility or the camera menus can be used for connection to ftp servers in ftp upload mode; see page 93 for information on using the camera menus for ftp).

Follow the steps below to install the Wireless Transmitter Utility under Windows 8.1, Windows 7, Windows Vista, or OS X.

❑ System Requirements

Before using the UT-1, WT-5, or the Wireless Transmitter Utility, confirm that your system meets the following requirements. Supported operating systems are listed on the Wireless Transmitter Utility download site (🕮13).

Camera	For information on whether more recent models support the UT-1, see the camera manual. Be sure to update to the latest versions of the UT-1 firmware and Wireless Transmitter Utility.
Power source	One EN-EL15 rechargeable Li-ion battery or EP-5B power connector and EH-5b AC adapter (available separately)

Network	• **Wireless**: WT-5 wireless transmitter and wireless LAN access point or computer with built-in or external wireless LAN adapter (IEEE 802.11n, 802.11b, 802.11g, or 802.11a compliant). • **Ethernet**: Ethernet cable and computer with built-in or external Ethernet port (100BASE-TX or 10BASE-T)
Miscellaneous	• **USB**: A USB cable and a computer with built-in USB port are required when copying network profiles to camera. *

* Connect the camera directly to the computer. The camera may not function as expected when connected via a hub, extension cable, or keyboard.

❑ Installing Software

Before connecting to a network, install the Wireless Transmitter Utility as described below. Before proceeding, confirm that your computer meets the system requirements on page 11. Be sure to update to the latest versions of the Wireless Transmitter Utility and camera and UT-1 firmware.

1 Double-click the installer icon.

Using the CD supplied with the UT-1, download the Wireless Transmitter Utility from a Nikon website. When download is complete, double-click the installer icon.

2 Select a language (Windows only).

Select a language and click **Next**.

3 Start the installer.

Click **Next** (Windows) or **Continue** (OS X) and follow the on-screen instructions.

Windows

Wireless Transmitter Utility - InstallShield Wizard
Welcome to the InstallShield Wizard for Wireless Transmitter Utility
The InstallShield(R) Wizard will install Wireless Transmitter Utility on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel

Click **Next**

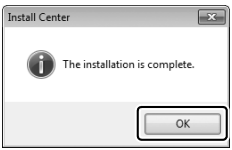
OS X

Click **Continue**

4 Exit the installer.

Click **OK** (Windows) or **Close** (OS X) when installation is complete.

Windows



Click **OK**

OS X

Click **Close**

The WT-4 Setup Utility

The Wireless Transmitter Utility must be reinstalled if the WT-4 Setup Utility or other Nikon software for wireless networks is installed after installation is complete.

Transfer, Control, and HTTP

Ethernet Connections

Follow the steps below to connect via an Ethernet network. For information on wireless connections, see page 23.

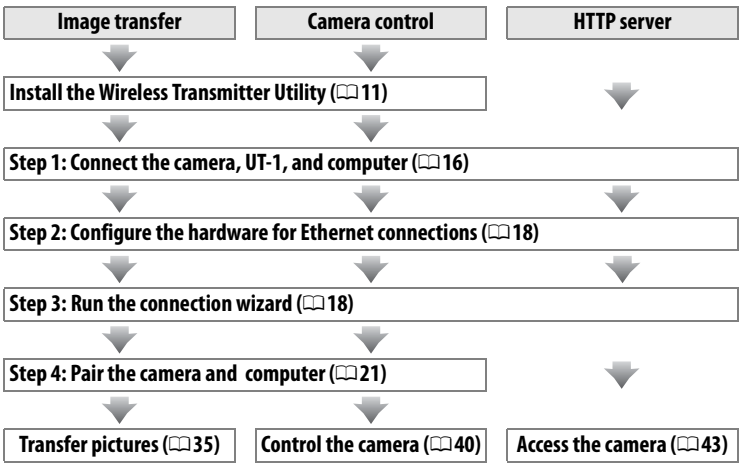


Image transfer
Camera control
HTTP server
Install the Wireless Transmitter Utility (📖11)
Step 1: Connect the camera, UT-1, and computer (📖16)
Step 2: Configure the hardware for Ethernet connections (📖18)
Step 3: Run the connection wizard (📖18)
Step 4: Pair the camera and computer (📖21)
Transfer pictures (📖35)
Control the camera (📖40)
Access the camera (📖43)

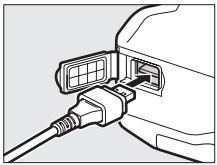
Step 1: Connecting the Equipment

Before proceeding with the following steps, start the computer and log in.

1 Insert a memory card.

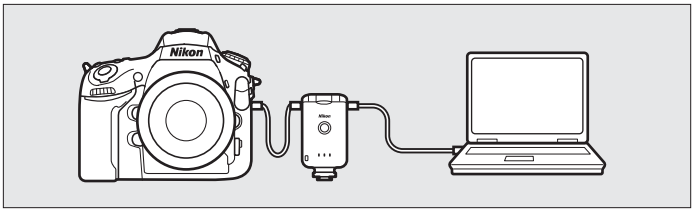
Turn the camera off and insert a memory card (do not turn the camera off or disconnect the Ethernet cable while data are being transferred to the computer). This step can be omitted in camera control mode (🕮40).

2 Open the UT-1 USB connector cover and connect the USB cable from the UT-1 to the camera USB connector (for more information on connecting USB cables to the camera, see the camera manual).



3 Connect an Ethernet cable.

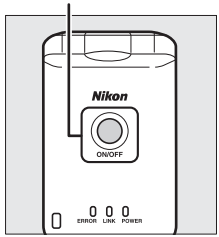
Connect the Ethernet cable as shown below. Do not use force or insert the connectors at an angle.



4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn the UT-1 on.

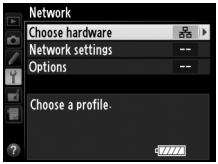


Step 2: Configuring the Hardware for Ethernet Connections

Configure the UT-1 for use with Ethernet networks.

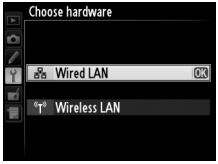
1 Display the hardware list.

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶ to view the hardware list.



2 Select **Wired LAN**.

Highlight **Wired LAN** and press OK to select the highlighted option and return to the network menu.

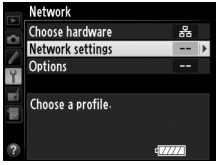


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

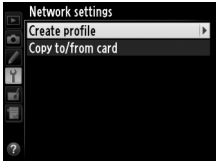
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



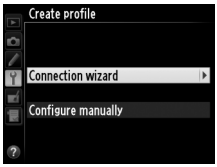
2 Select **Create profile**.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (📖83).



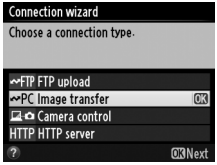
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.



4 Choose a connection type (🕮7).

Highlight **Image transfer**, **Camera control**, or **HTTP server** and press ▶.

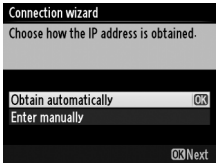


5 Name the new network profile.

Enter the name that will appear in the profile list and press ⓚ. Profile names can be up to 16 characters long.

Connection wizard
Enter a name for the network profile.
0 1 2 3 4 5 6 7 8 9 A B C D E
F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i
LAN1
Cursor Input OK

6 Obtain or select an IP address.

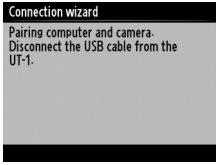


Highlight one of the following options and press ▶.

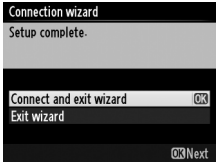
- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press ⓚ to proceed when entry is complete.

7 Choose your next step.

The IP address will be displayed; press ⓚ. Your next step depends on the connection type selected in Step 4 on page 19:



If you chose Image transfer or Camera control, disconnect the USB cable from the UT-1 and proceed to page 21.

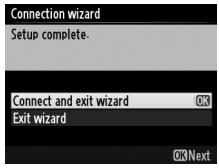


If you chose HTTP server, proceed to Step 8.

Routers

Connection to computers on other networks via a router is supported only when **FTP upload** or **HTTP server** is selected.

8 Exit the wizard.



Highlight one of the following options and press ⓚ.

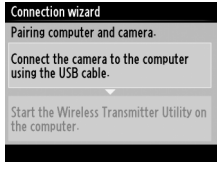
- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

Proceed to "HTTP Server" (🕮43).

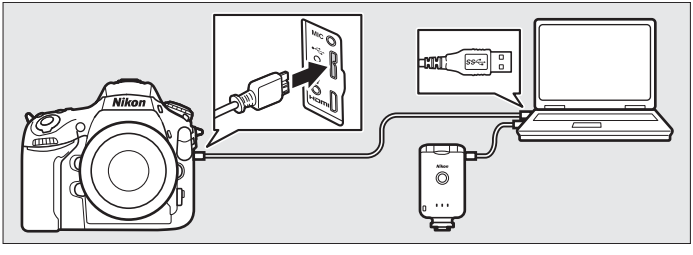
Step 4: Pairing

If you selected **Image transfer** or **Camera control** in Step 4 of the connection wizard (🕮19), pair the camera with the computer as described below. Pairing allows the computer to connect to the camera.

1 Connect the camera to the computer via USB.

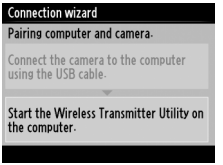

Connection wizard
Pairing computer and camera.
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

When prompted, connect the camera to the computer using the USB cable supplied with the camera.



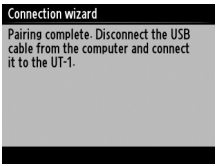
2 Start the Wireless Transmitter Utility.

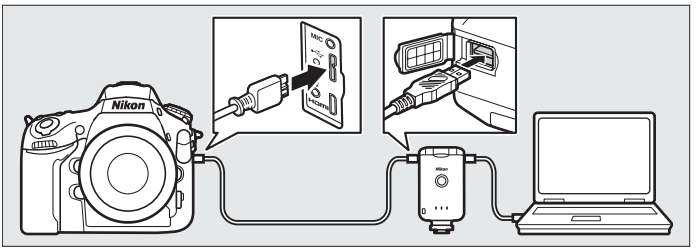
When prompted, start the copy of the Wireless Transmitter Utility installed on the computer. Pairing will begin automatically.


Connection wizard
Pairing computer and camera.
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

3 Disconnect the camera.

The message at right will be displayed when pairing is complete. Disconnect the USB cable from the computer and connect the UT-1.

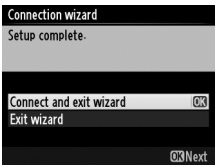




4 Exit the wizard.

Highlight one of the following options and press OK.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.



Proceed to "Image Transfer" (🕮35) or "Camera Control" (🕮40).

Wireless Connections

Follow the steps below to connect to a wireless network.

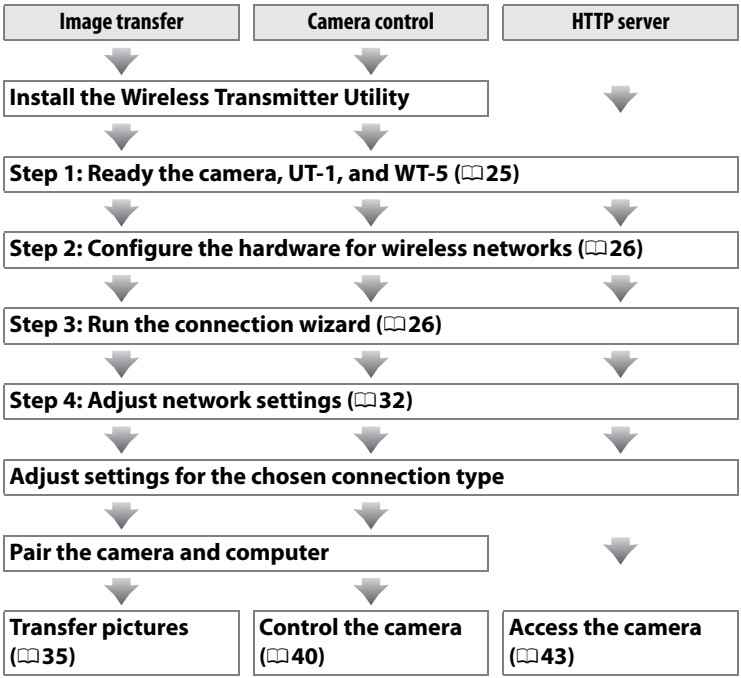


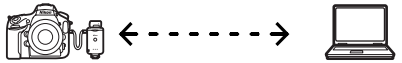
Image transfer
Camera control
HTTP server
Install the Wireless Transmitter Utility
Step 1: Ready the camera, UT-1, and WT-5 (📖25)
Step 2: Configure the hardware for wireless networks (📖26)
Step 3: Run the connection wizard (📖26)
Step 4: Adjust network settings (📖32)
Adjust settings for the chosen connection type
Pair the camera and computer
Transfer pictures (📖35)
Control the camera (📖40)
Access the camera (📖43)

Infrastructure and Ad Hoc Modes

Wireless networks may be either infrastructure or ad hoc.

Infrastructure mode: Connection via a wireless LAN access point.

Ad hoc mode: A direct peer-to-peer connection. *



* Some operating systems may not support ad-hoc mode.

Wireless LANs

These instructions are intended for customers with an existing wireless LAN, and in the case of infrastructure networks assume that the computer and access point are already connected to the network.

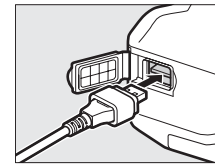
Step 1: Readying the Equipment

After starting the computer and logging in, ready the camera and WT-5 as described below.

1 Insert a memory card.

Turn the camera off and insert a memory card (do not turn the camera off while data are being transferred to the computer). This step can be omitted in camera control mode (🕮7).

2 Open the UT-1 USB connector cover and connect the USB cable from the UT-1 to the camera USB connector (for more information on connecting USB cables to the camera, see the camera manual).

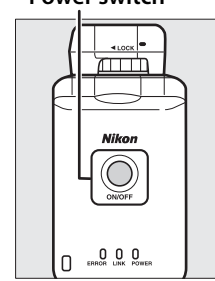


3 Attach the WT-5 (🕮6).

4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn the UT-1 on.

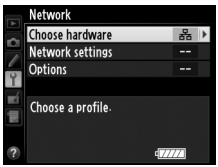


Step 2: Enabling a Wireless Connection

Configure the UT-1 for use with wireless networks.

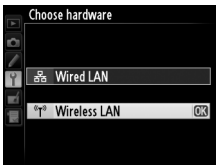
1 Display the hardware list.

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶ to view the hardware list.



2 Select **Wireless LAN**.

Highlight **Wireless LAN** and press ⓚ to select the highlighted option and return to the network menu.

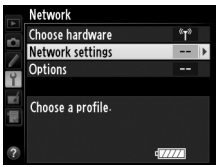


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

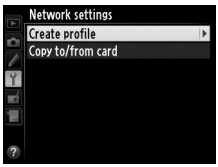
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



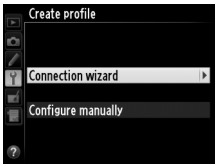
2 Select **Create profile**.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding.



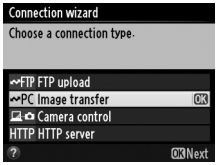
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.



4 Choose a connection type (🕮7).

Highlight **Image transfer**, **Camera control**, or **HTTP server** and press ▶.



5 Name the new network profile.

Enter the name that will appear in the profile list and press ⓚ (to use the default name, press ⓚ without making any changes). Profile names can be up to 16 characters long.

Connection wizard
Enter a name for the network profile.
0 1 2 3 4 5 6 7 8 9 A B C D E
F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i
WLAN1
Cursor Input OK

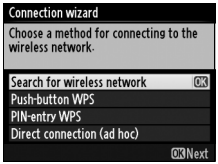
6 Choose a connection method.

Highlight the connection method used by the network and press ▶. More information can be found on the pages listed below.

Search for wireless network	Choose from a list of networks detected by the camera.	🕮28
Push-button WPS	Choose for wireless LAN access points with push-button WPS.	🕮29
PIN-entry WPS	Choose for wireless LAN access points with PIN-entry WPS.	🕮30
Direct connection (ad hoc)	Connect directly to a host computer or ftp server in ad hoc mode.	🕮31

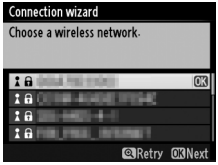
■■ *Search for Wireless Network*

Select **Search for wireless network** in Step 6 on page 27 to choose from a list of the networks (wireless LAN access points or host computers) detected by the camera.



1 Choose a network.

Selecting **Search for wireless network** displays a list of SSIDs. The network type is indicated by the icons to the left of the ID:



🔒	Signal encrypted
🧍/💻	Infrastructure/ad hoc

Highlight a network and press ⓚ (if the desired network is not displayed, press ⊕ to search again).

Hidden SSIDs

Networks with hidden SSIDs are indicated by blank entries in the network list. If you select a network with a hidden SSID, you will be prompted to provide the network name; enter a name and press ⓚ to proceed to Step 2.

2 Enter the encryption key.

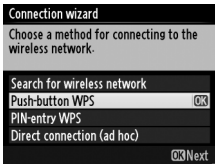
Enter the encryption key and press ⓚ (if the network uses open authentication, this dialog will not be displayed; proceed to Step 3).

3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 32.

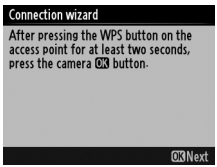
■■ *Push-Button WPS*

Choose **Push-button WPS** in Step 6 on page 27 if the wireless LAN access point uses push-button WPS.



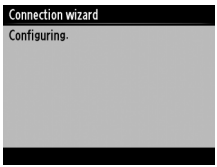
1 Press the WPS button on the wireless LAN access point.

For more information, see the documentation provided with the wireless LAN access point.


Connection wizard
After pressing the WPS button on the access point for at least two seconds, press the camera OK button.
OK Next

2 Press ⓚ button on the camera.

The camera will connect to the access point automatically.

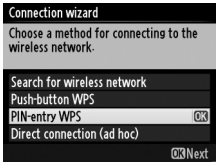


3 Choose your next step.

The message at right is displayed when a connection is established. Press ⓚ and proceed to page 32.

■■ *PIN-Entry WPS*

Choose **PIN-entry WPS** in Step 6 on page 27 if the wireless LAN access point uses PIN-entry WPS.

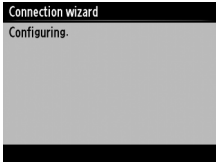


1 Enter the PIN for the wireless LAN access point.

From a computer, enter the PIN for the wireless LAN access point. For more information, see the documentation provided with the wireless LAN access point.

2 Press ⓚ button on the camera.

The camera will connect to the access point automatically.

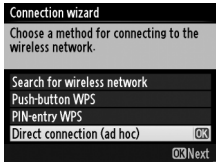


3 Choose your next step.

The message at right is displayed when a connection is established. Press ⓚ and proceed to page 32.

■■ *Direct Connection (Ad Hoc)*

To connect directly to an ftp server or computer in ad hoc mode, select **Direct connection (ad hoc)** in Step 6 on page 27.



1 Enter the SSID.

Enter a network name (SSID) and press ⓚ. The default name is "WT" followed by the MAC address of the WT-5.

2 Enter the encryption key.

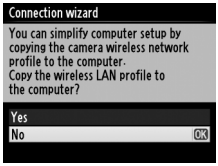
Enter an encryption key and press ⓚ (the default key is "nikon"). Proceed to page 32.

Connection wizard
The encryption key can be 5 or 13 characters long.
0 1 2 3 4 5 6 7 8 9 A B C D E
F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i
nikon
Cursor Input OK OK

Step 4: Network Settings

Choose an IP address.

1 Choose whether to copy the profile to the computer.


Connection wizard
You can simplify computer setup by copying the camera wireless network profile to the computer.
Copy the wireless LAN profile to the computer?
Yes
No
OK

Highlight one of the options at right and press ▶. To copy the new WT-5 network profile to the computer (🕮91), select **Yes** (note that ad hoc settings can not be copied to computers running Windows 8.1 or OS X, and that network settings for other operating systems may be overwritten).

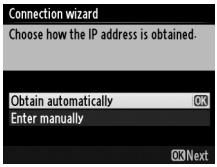
Routers

Connection to computers on other networks via a router is supported only when HTTP server is selected.

MAC Address Filtering

If the network uses MAC address filtering, the filter must be supplied with the MAC address of the WT-5. After attaching the WT-5 to the camera, choose **Network** > **Options** > **MAC address** from the camera setup menu and note the MAC address.

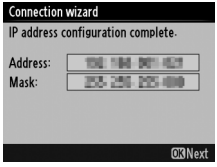
2 Obtain or select an IP address.



Highlight one of the following options and press ▶.

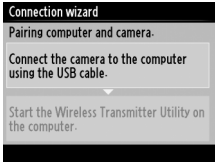
- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press ⊛ to proceed when entry is complete.

3 Confirm the IP address.

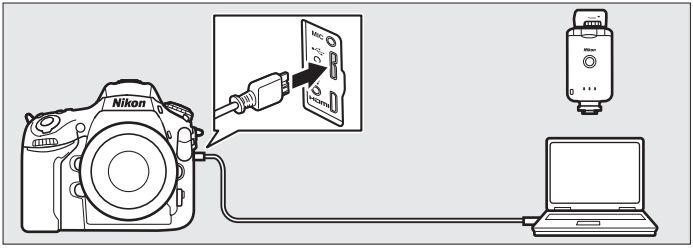


The camera IP address will be displayed as shown at right; press ⊛. If **Image transfer** or **Camera control** is selected, disconnect the USB cable from the UT-1 and proceed to Step 4; otherwise, proceed to Step 7.

4 Connect the camera to the computer.

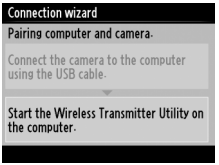

Connection wizard
Pairing computer and camera.
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

When prompted, connect the camera to the computer using the USB cable supplied with the camera.



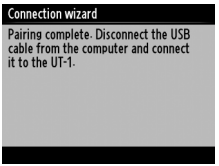
5 Start the Wireless Transmitter Utility.

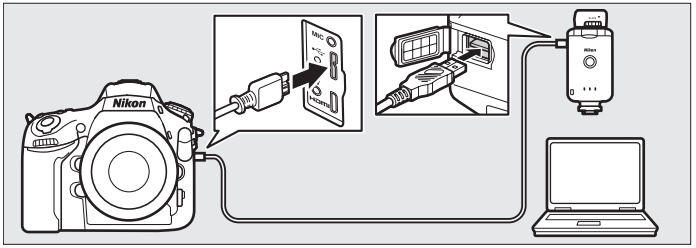
When prompted, start the copy of the Wireless Transmitter Utility installed on the computer (🕮11). Pairing will begin automatically.


Connection wizard
Pairing computer and camera.
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

6 Disconnect the camera.

The message at right will be displayed when pairing is complete. Disconnect the USB cable from the computer and connect the UT-1.

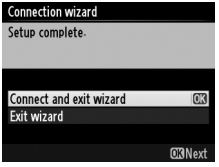




7 Exit the wizard.

Highlight one of the following options and press ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the network.
- **Exit wizard**: Save the new network profile and exit.



Proceed to "Image Transfer" (🕮35), "Camera Control" (🕮40), or "HTTP Server" (🕮43).

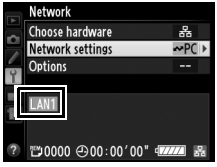
Image Transfer

Image transfer is used to upload photographs and movies to the computer from a camera memory card. The explanation that follows assumes that existing pictures are used.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. Image transfer profiles are indicated by a ⁓PC icon. Highlight a profile and press ▶ to select the highlighted profile and return to the network menu.

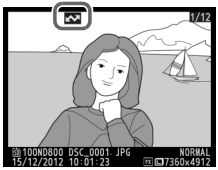
The profile name will be displayed in green when a connection is established.



2 View pictures.

Press the ▶ button to view pictures. Display the first picture to be sent in single-image playback or highlight it in the thumbnail list.

3 Upload pictures.

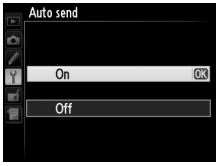


Press ⓞ. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue when upload is complete. Additional pictures will be uploaded in the order selected.

To upload a picture that has already been uploaded once, press ⓞ once to remove the blue transfer icon, and then press ⓞ again to mark the image with a white transfer icon.

Uploading New Photographs as They Are Taken

To upload new photographs as they are taken, select **On** for **Network** > **Options** > **Auto send** in the setup menu (🕮87).



Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press ⊛. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off
- Selecting **Yes** for **Network** > **Options** > **Deselect all?** (🕮88; this option also removes transfer marking from all images)

☑ During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

🖉 Interval Timer Photography

Shooting will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

🖉 Loss of Signal

Wireless transmission via the WT-5 may be interrupted if the signal is lost, but can be resumed by turning the camera off and then on again.

🖉 Turning the Camera Off

"Send" marking will be saved if the camera or UT-1 is turned off while transmission is in progress. Transmission of images marked with a "send" icon will resume when the camera or UT-1 is turned on.

🖉 Destination Folders

By default, images are uploaded to the following folders:

- **Windows**: \Users\(user name)\Pictures\Wireless Transmitter Utility
- **OS X**: /Users/(user name)/Pictures/Wireless Transmitter Utility

The destination folder can be selected using the Wireless Transmitter Utility.

Transfer Status

During playback, the status of images selected for upload is shown as follows:

: "Send"

Images that have been selected for upload are marked with a white icon.

: "Sending"

A green icon is displayed during upload.

: "Sent"

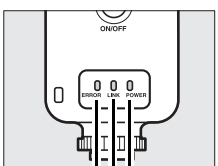
Images that have been uploaded successfully are marked with a blue icon.

Network Status

The status of the link between the host and the UT-1 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

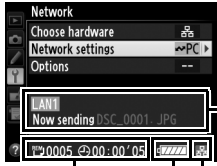
The **POWER** LED lights when the UT-1 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	ERROR	LINK	POWER
UT-1 off	● (off)	● (off)	● (off)
USB cable not connected	● (off)	● (off)	○ (on)
Connecting to host	● (off)	○ (on)	○ (on)
Waiting to send or sending data	● (off)	☼ (flashes)	○ (on)
Connection error	☼ (flashes)	● (off)	○ (on)
UT-1 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. While files are being transferred, the status display shows "Now sending" followed by the name of the file being sent. Any errors that occur during transfer are also displayed here (🕮112).

REM, 🕘: The estimated time required to send the remaining images.

Battery level: A five-level display showing the charge state of the battery in the UT-1.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

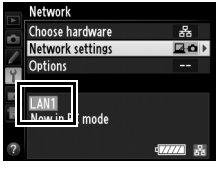
Camera Control

Select this option to control the camera from a computer running Camera Control Pro 2 (available separately) and save photographs directly to the computer hard disk instead of the camera memory card (movies will still be saved to the camera memory card; insert a memory card before shooting movies). Note that the camera exposure meters do not turn off when the camera is in camera control mode.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. Camera control profiles are indicated by a icon. Highlight a profile and press ▶ to select the highlighted profile and return to the network menu.

The profile name will be displayed in green when a connection is established.



2 Start Camera Control Pro 2.

Start the copy of Camera Control Pro 2 (available separately) installed on the host computer. For information on using Camera Control Pro 2, see the Camera Control Pro 2 manual (pdf).

Ethernet Networks

Do not disconnect the Ethernet cable while the camera is on.

Wireless Networks

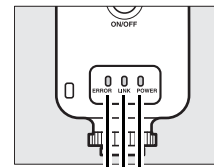
Operations may take longer on wireless networks. If the signal is disrupted while pictures are being transferred to Camera Control Pro 2, the LED on the WT-5 will flash yellow; turn the camera off and then on again. Transfer will resume when the connection is re-established. Note that transfer can not be resumed if you turn the camera off again before transfer is complete.

Network Status

The status of the link between the host and the UT-1 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

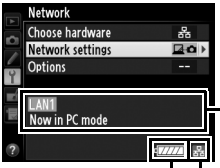
The **POWER** LED lights when the UT-1 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	ERROR	LINK	POWER
UT-1 off	● (off)	● (off)	● (off)
USB cable not connected	● (off)	● (off)	○ (on)
Connecting to host	● (off)	○ (on)	○ (on)
Waiting to send or sending data	● (off)	☼ (flashes)	○ (on)
Connection error	☼ (flashes)	● (off)	○ (on)
UT-1 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. Any errors that occur during transfer are also displayed here (🕮112).

Battery level: A five-level display showing the charge state of the battery in the UT-1.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

HTTP Server

Select **HTTP server** to view the pictures on the camera memory card or take photographs from the web browser on a computer or iPhone (see page 48 for system requirements). Up to five users can access the camera at one time, although only one can take photographs. Note that the exposure meters do not turn off automatically when the camera is in http server mode.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. HTTP server profiles are indicated by a HTTP icon. Highlight a profile and press ▶ to select the highlighted profile and return to the network menu.

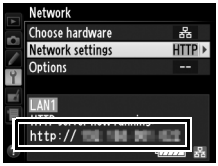
The URL used for connection to the camera is displayed when a connection is established.

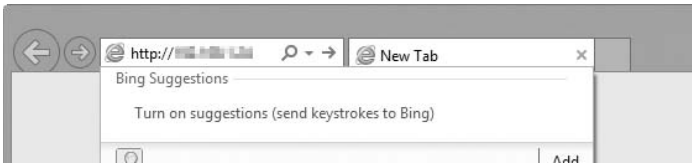
2 Launch the web browser.

Launch the web browser on the computer or iPhone.

3 Enter the camera URL.

Enter the camera URL ("http://" followed by the camera IP address, as shown in the network menu) in the browser window address field.





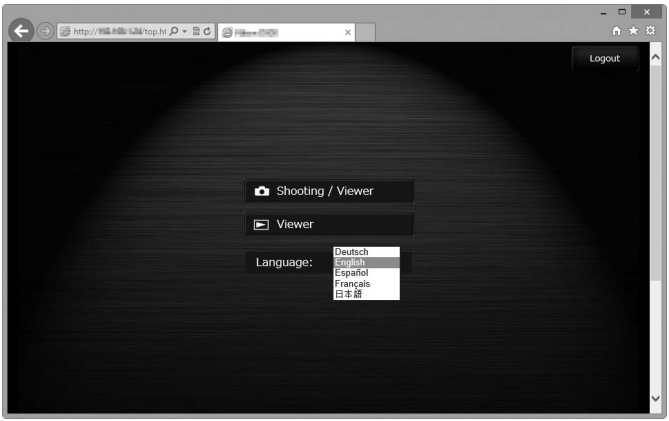
4 Log in.

Enter your user name and password in the web browser login dialog (the user name and password are set using **Network settings** > **Options** > **HTTP user settings** in the network menu as described on page 89; the default user name is "nikon" while the default password is blank).

Windows Security
iexplore
The server [redacted] at Nikon [redacted] requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
nikon
Password
Remember my credentials
OK
Cancel

5 Choose a language.

Click **Language**.



6 Choose an operating mode.

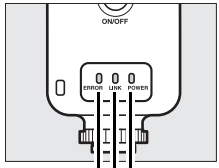
Choose **Shooting/Viewer** to take pictures (🕮49, 53) and **Shooting/Viewer** or **Viewer** to view existing pictures (🕮51, 54). Up to five users at a time can connect using **Viewer**, but only one user at a time can connect using **Shooting/Viewer** (if another user is already connected using **Shooting/Viewer**, **Shooting/Viewer** will not be displayed and only four users will be able to connect using **Viewer**).

Network Status

The status of the link between the host and the UT-1 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

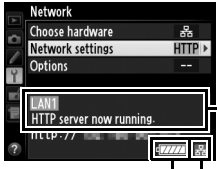
The **POWER** LED lights when the UT-1 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	ERROR	LINK	POWER
UT-1 off	● (off)	● (off)	● (off)
USB cable not connected	● (off)	● (off)	○ (on)
Connecting to host	● (off)	○ (on)	○ (on)
Waiting to send or sending data	● (off)	☼ (flashes)	○ (on)
Connection error	☼ (flashes)	● (off)	○ (on)
UT-1 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The camera URL is displayed in green when a connection is established. Errors are also displayed here (🕮112).

Battery level: A five-level display showing the charge state of the battery in the UT-1.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

HTTP Server System Requirements

Windows	
OS	Pre-installed 64- and 32-bit versions of Windows 8.1, Windows 7 (Service Pack 1), and Windows Vista (Service Pack 2); in 64-bit versions of Windows 8.1, Windows 7, and Windows Vista, application runs in 32-bit compatible mode
Browser	• **Windows 8.1**: Internet Explorer 11 • **Windows 7**: Internet Explorer 10 • **Windows Vista**: Internet Explorer 9
Monitor	• **Resolution**: 1,024 × 768 pixels (XGA) or more; 1,280 × 1,024 pixels (SXGA) or more recommended • **Color**: 24-bit color (True Color) or more

Mac	
OS	OS X version 10.9, 10.8, or 10.7
Browser	• **OS X version 10.9**: Safari 7 • **OS X versions 10.8 and 10.7**: Safari 6
Monitor	• **Resolution**: 1,024 × 768 pixels (XGA) or more; 1,280 × 1,024 pixels (SXGA) or more recommended • **Color**: 24-bit color (millions of colors) or more

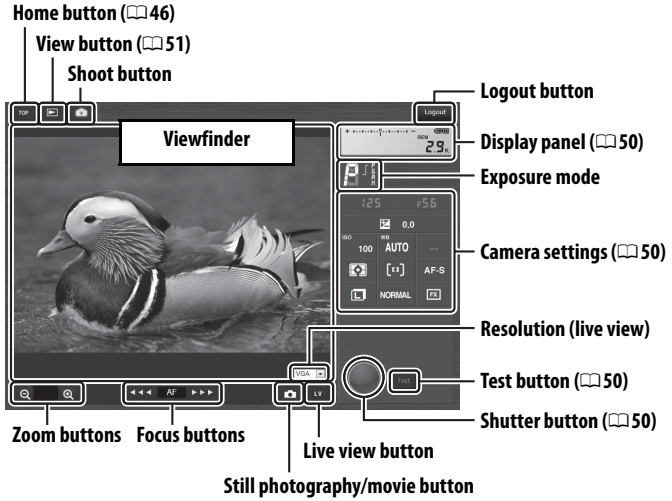
iPhone	
OS	iOS 7 or iOS 6
Browser	Safari (supplied with iOS)

Computer Web Browsers

This section describes the http server displays for computer web browsers (note that the display varies with the model of camera). Click to adjust camera settings. For information on the displays for iPhones, see page 53.

The Shooting Window

The following controls can be accessed by selecting **Shooting/ Viewer** on the server home page or clicking the shoot button in the viewer window.

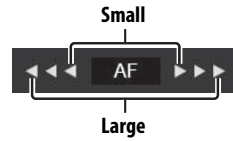


Movie Live View

The information at right appears in the camera settings area (📖50) in movie live view.

Focus Buttons

The size of the focus adjustment increases with the distance of the button from the center of the display.



Display panel	Contains the exposure indicator and shows the battery level and number of exposures remaining.
Camera settings	Settings for still photography and movie recording can be adjusted by clicking the icons in the camera settings panel. See the camera manual for more information.
Shutter button	Take a photograph or start and end movie recording. To focus, click the desired subject in the viewfinder area.
Test button	Take a test photo and display it in the viewfinder without recording it to the camera memory card. Not available in movie live view.

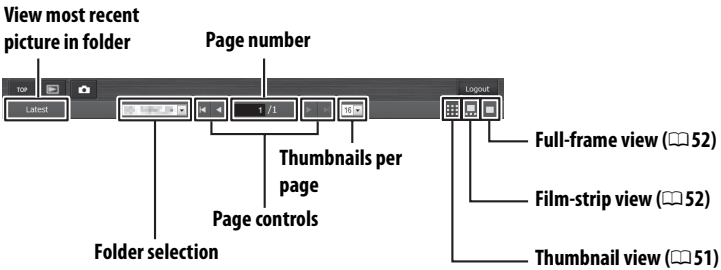
The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or clicking the view button in the shooting window. The viewer window for computer web browsers offers a choice of thumbnail, film-strip (🕮52), and full-frame views (🕮52).

❑ Thumbnail View

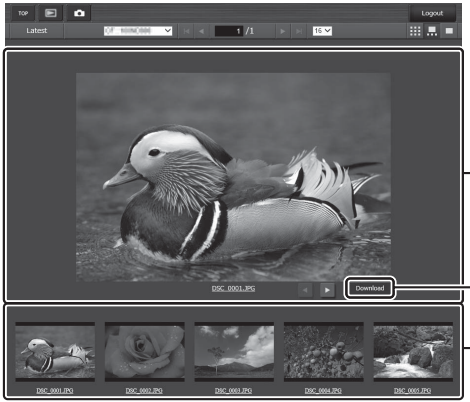
View multiple small ("thumbnail") images per page. The controls at the top of the window can be used for navigation.

Navigation Controls



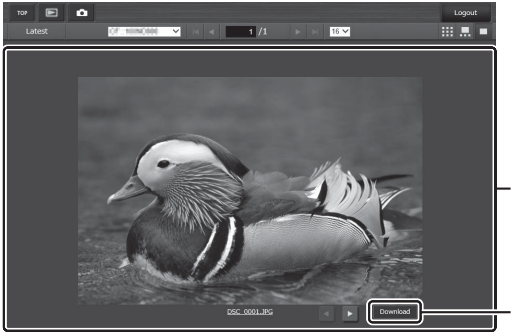
❑ Film-Strip View

Choose the picture displayed from the thumbnails at the bottom of the window.



❑ Full-Frame View

View pictures full frame.

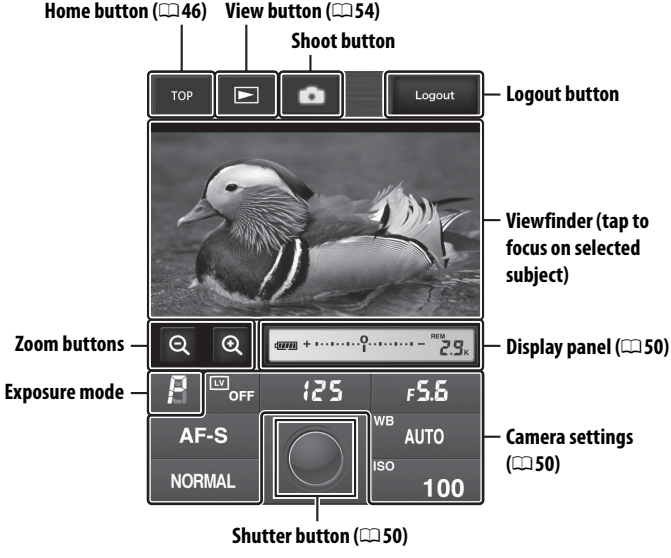


iPhone Web Browsers

This section describes the http server displays for iPhone web browsers (note that the display varies with the model of camera). Tap to adjust camera settings. For information on computer displays, see page 49.

The Shooting Window

The following controls can be accessed by selecting **Shooting/ Viewer** on the server home page or tapping the shoot button in the viewer window.

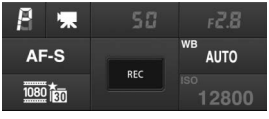


The Live View Button

Tap to choose from live view off, photo live view, and movie live view.

Movie Live View

The information at right appears in the camera settings area (🕮50) in movie live view.

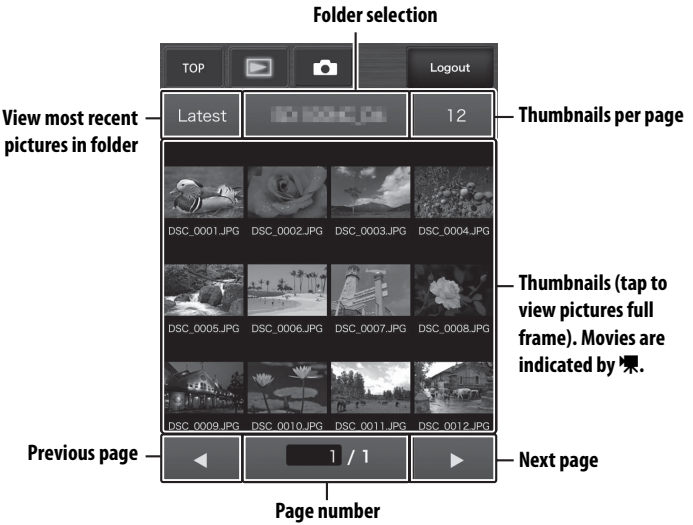


The Viewer Window

The viewer window can be accessed by selecting **Viewer** on the server home page or tapping the view button in the shooting window. The viewer window for iPhone web browsers offers a choice of thumbnail and full-frame views (🕮55).

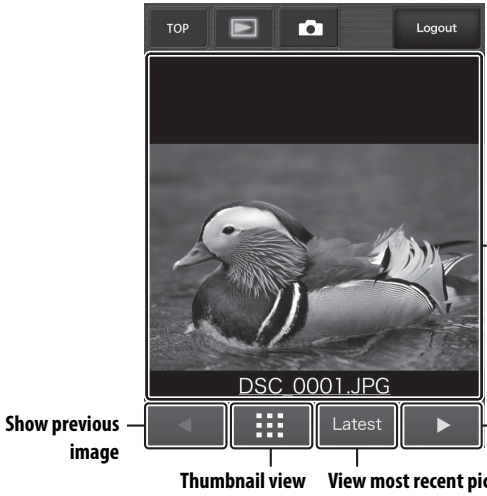
❑ Thumbnail View

View multiple small ("thumbnail") images per page. The controls at the top and bottom of the thumbnail area can be used for navigation.



❑ Full-Frame View

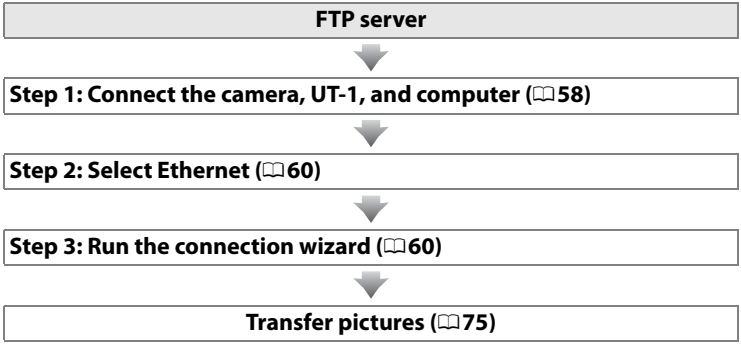
View pictures full frame.



FTP

Ethernet Connections

Follow the steps below to connect to an ftp server via an Ethernet network. For information on wireless connections, see page 64.


FTP server
Step 1: Connect the camera, UT-1, and computer (📖58)
Step 2: Select Ethernet (📖60)
Step 3: Run the connection wizard (📖60)
Transfer pictures (📖75)

Choosing a Power Source

To prevent the camera powering off unexpectedly during setup or data transfer, use a fully-charged battery or an optional AC adapter designated for use with your camera. For more information, see the camera manual.

FTP Servers

Servers can be configured using standard ftp services, such as IIS (Internet Information Services), available with supported operating systems (📖94). Connection to computers on other networks via a router, Internet ftp connections and ftp servers running third-party software are not supported.

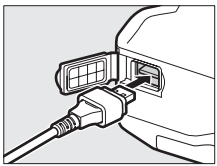
Step 1: Connecting the Hardware

After starting the ftp server, connect the camera as described below.

1 Insert a memory card.

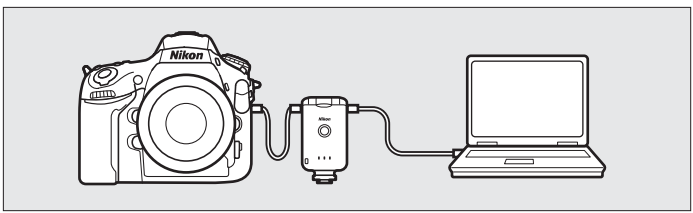
Turn the camera off and insert a memory card (do not turn the camera off while data are being transferred to the computer).

2 Open the UT-1 USB connector cover and connect the USB cable from the UT-1 to the camera USB connector (for more information on connecting USB cables to the camera, see the camera manual).



3 Connect an Ethernet cable.

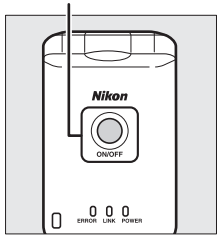
Connect the camera to the ftp server as shown below. Do not use force or insert the connectors at an angle.



4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn the UT-1 on.

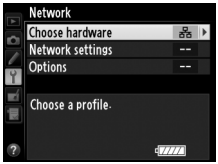


Step 2: Configuring the Hardware for Ethernet Connections

Configure the UT-1 for use with Ethernet networks.

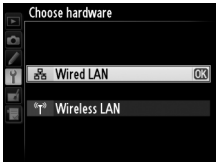
1 Display the hardware list.

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶ to view the hardware list.



2 Select **Wired LAN**.

Highlight **Wired LAN** and press OK to select the highlighted option and return to the network menu.



Step 3: The Connection Wizard

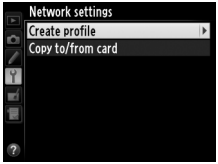
Follow the on-screen instructions to create a network profile.

1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.

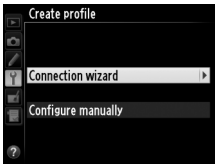
2 Select **Create profile**.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (📖83).



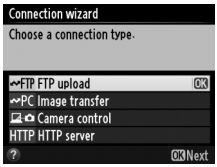
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.



4 Choose a connection type.

Highlight **FTP upload** and press ▶.



5 Name the new network profile.

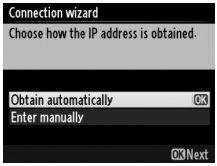
Enter the name that will appear in the profile list and press ⓚ (to use the default name, press ⓚ without making any changes). Profile names can be up to 16 characters long.

Connection wizard
Enter a name for the network profile.
0 1 2 3 4 5 6 7 8 9 A B C D E
F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i
LAN1
Cursor Input OK

6 Obtain or select an IP address.

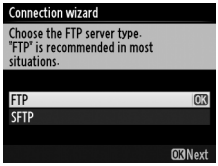
Highlight one of the following options and press ▶.

- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press ⓚ to proceed when entry is complete.



7 Choose the server type.

Highlight **FTP** or **SFTP** (secure ftp) and press ▶.

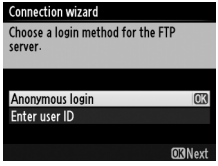


8 Enter the IP address.

Enter the server URL or IP address and press ⓚ to connect.

9 Log in.

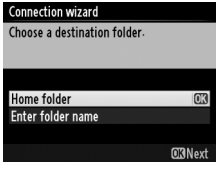
Highlight one of the following options and press ⓚ.



- **Anonymous login**: Select this option if the server does not require a user ID or password.
- **Enter user ID**: Enter a user ID and password when prompted and press ⓚ.

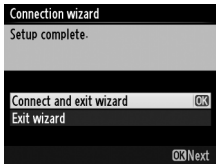
10 Choose a destination folder.

Highlight one of the following options and press ⓚ.



- **Home folder**: Select this option to upload pictures to the server's home folder.
- **Enter folder name**: Select this option to upload pictures to another folder (the folder must already exist on the server). Enter a folder name and path when prompted and press ⓚ.

11 Exit the wizard.



Highlight one of the following options and press ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

Proceed to "FTP Upload" (🕮75).

Wireless Connections

Follow the steps below to connect to a wireless network.

FTP upload

↓

Step 1: Ready the camera, UT-1, and WT-5 (📖65)

↓

Step 2: Configure the hardware for wireless networks (📖66)

↓

Step 3: Run the connection wizard (📖66)

↓

Step 4: Adjust network settings (📖72)

↓

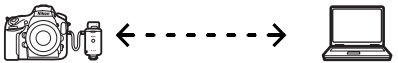
Transfer pictures (📖75)

Infrastructure and Ad Hoc Modes

Wireless networks may be either infrastructure or ad hoc.

Infrastructure mode: Connection via a wireless LAN access point.

Ad hoc mode: A direct peer-to-peer connection. *



* Some operating systems may not support ad-hoc mode.

Wireless LANs

These instructions are intended for customers with an existing wireless LAN, and in the case of infrastructure networks assume that the computer and access point are already connected to the network.

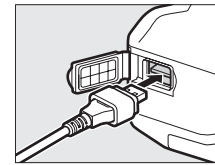
Step 1: Connecting the Equipment

After starting the computer and logging in, ready the camera and WT-5 as described below.

1 Insert a memory card.

Turn the camera off and insert a memory card (do not turn the camera off while data are being transferred to the computer). This step can be omitted in camera control mode (🕮7).

2 Open the UT-1 USB connector cover and connect the USB cable from the UT-1 to the camera USB connector (for more information on connecting USB cables to the camera, see the camera manual).

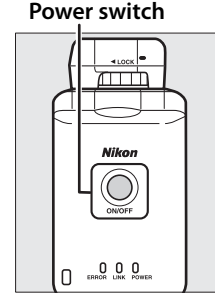


3 Attach the WT-5 (🕮6).

4 Turn the camera on.

Rotate the power switch to turn the camera on.

5 Press the power switch for about a second to turn on the UT-1.

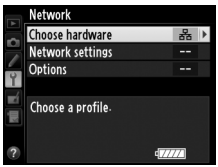


Step 2: Enabling a Wireless Connection

Configure the UT-1 for use with wireless networks.

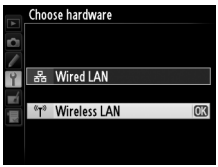
1 Display the hardware list.

In the setup menu, select **Network**, then highlight **Choose hardware** and press ▶ to view the hardware list.



2 Select **Wireless LAN**.

Highlight **Wireless LAN** and press OK to select the highlighted option and return to the network menu.

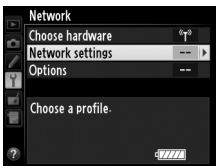


Step 3: The Connection Wizard

Follow the on-screen instructions to create a network profile.

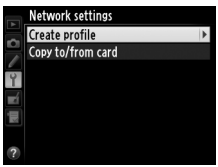
1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.



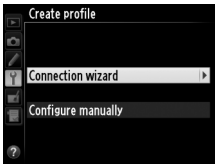
2 Select **Create profile**.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding.



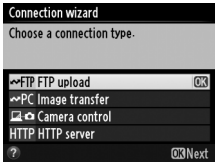
3 Start the connection wizard.

Highlight **Connection wizard** and press ▶ to start the connection wizard.



4 Choose **FTP upload** (🕮7).

Highlight **FTP upload** and press ▶.



5 Name the new network profile.

Enter the name that will appear in the profile list and press ⓞ (to use the default name, press ⓞ without making any changes). Profile names can be up to 16 characters long.

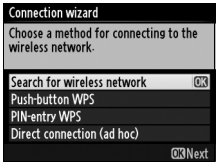
6 Choose a connection method.

Highlight the connection method used by the network and press ▶. More information can be found on the pages listed below.

Search for wireless network	Choose from a list of networks detected by the camera.	🕮68
Push-button WPS	Choose for wireless LAN access points with push-button WPS.	🕮69
PIN-entry WPS	Choose for wireless LAN access points with PIN-entry WPS.	🕮70
Direct connection (ad hoc)	Connect directly to a host computer or ftp server in ad hoc mode.	🕮71

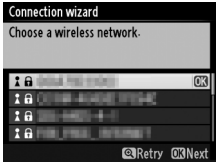
■■ *Search for Wireless Network*

Select **Search for wireless network** in Step 6 on page 67 to choose from a list of the networks (wireless LAN access points or host computers) detected by the camera.



1 Choose a network.

Selecting **Search for wireless network** displays a list of SSIDs. The network type is indicated by the icons to the left of the ID:



🔒	Signal encrypted
🧍/💻	Infrastructure/ad hoc

Highlight a network and press ⓚ (if the desired network is not displayed, press 🔍 to search again).

Hidden SSIDs

Networks with hidden SSIDs are indicated by blank entries in the network list. If you select a network with a hidden SSID, you will be prompted to provide the network name; enter a name and press ⓚ to proceed to Step 2.

2 Enter the encryption key.

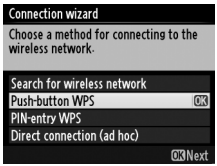
Enter the encryption key and press ⓚ (if the network uses open authentication, this dialog will not be displayed; proceed to Step 3).

3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 72.

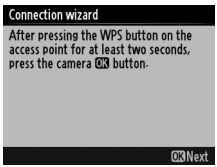
■■ *Push-Button WPS*

Choose **Push-button WPS** in Step 6 on page 67 if the wireless LAN access point uses push-button WPS.



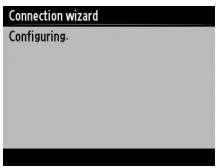
1 Press the WPS button on the wireless LAN access point.

For more information, see the documentation provided with the wireless LAN access point.


Connection wizard
After pressing the WPS button on the access point for at least two seconds, press the camera OK button.
OK Next

2 Press ⓚ button on the camera.

The camera will connect to the access point automatically.

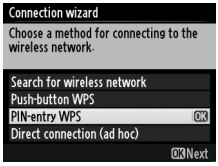


3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 72.

■■ *PIN-Entry WPS*

Choose **PIN-entry WPS** in Step 6 on page 67 if the wireless LAN access point uses PIN-entry WPS.



1 Enter the PIN for the wireless LAN access point.

From a computer, enter the PIN for the wireless LAN access point. For more information, see the documentation provided with the wireless LAN access point.

2 Press ⓚ button on the camera.

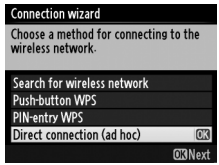
The camera will connect to the access point automatically.

3 Choose your next step.

The message at right is displayed when a connection is established. Proceed to page 72.

■■ *Direct Connection (Ad Hoc)*

To connect directly to an ftp server or computer in ad hoc mode, select **Direct connection (ad hoc)** in Step 6 on page 67.



1 Enter the SSID.

Enter a network name (SSID) and press ⊛. The default name is "WT" followed by the MAC address of the WT-5.

2 Enter the encryption key.

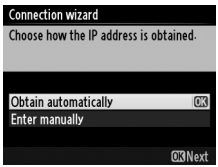
Enter an encryption key and press ⊛ (the default key is "nikon"). Proceed to page 72.

Connection wizard
The encryption key can be 5 or 13 characters long.
0 1 2 3 4 5 6 7 8 9 A B C D E
F G H I J K L M N O P Q R S T
U V W X Y Z a b c d e f g h i
nikon
Cursor Input OK OK

Step 4: Network Settings

Follow the steps below to connect to the ftp server.

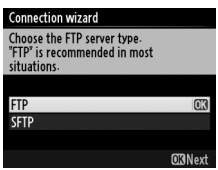
1 Obtain or select an IP address.



Highlight one of the following options and press ▶.

- **Obtain automatically**: Select this option if the network is configured to supply the IP address automatically. The camera will display the IP address provided by the network; Ⓚ to proceed.
- **Enter manually**: When prompted, enter an IP address and subnet mask by pressing ◀ and ▶ to highlight segments and ▲ and ▼ to change. Press Ⓚ when entry is complete. The camera will display the selected IP address; press Ⓚ to proceed.

2 Choose the server type.

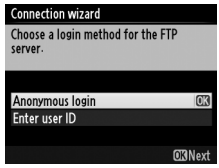


Highlight **FTP** or **SFTP** (secure ftp) and press ▶.

3 Enter the IP address.

Enter the server URL or IP address and press Ⓚ to connect.

4 Log in.



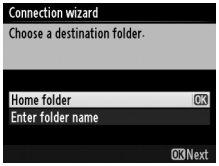
Highlight one of the following options and press ⓚ.

- **Anonymous login**: Select this option if the server does not require a user ID or password.
- **Enter user ID**: Enter a user ID and password when prompted and press ⓚ.

MAC Address Filtering

If the network uses MAC address filtering, the filter must be supplied with the MAC address of the WT-5. After attaching the WT-5 to the camera, choose **Network** > **Options** > **MAC address** from the camera setup menu and note the MAC address.

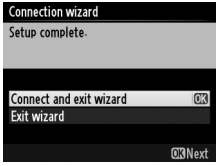
5 Choose a destination folder.



Highlight one of the following options and press ⓚ.

- **Home folder**: Select this option to upload pictures to the server's home folder.
- **Enter folder name**: Select this option to upload pictures to another of the folders existing on the server. Enter a folder name and path when prompted and press ⓚ.

6 Exit the wizard.



Highlight one of the following options and press ⓚ.

- **Connect and exit wizard**: Save the new network profile and connect to the server.
- **Exit wizard**: Save the new network profile and exit.

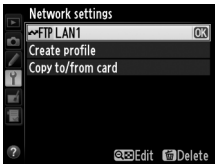
Proceed to "FTP Upload" (🕮75).

FTP Upload

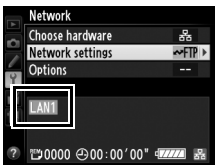
Photos and movies can be uploaded from camera memory cards to an ftp server as described below, or photos can be uploaded as they are taken. For information on setting up an ftp server, see page 94.

1 Display network profiles.

In the setup menu, select **Network** > **Network settings** to display the profiles list. FTP server profiles are indicated by a FTP icon. Highlight a profile and press ▶ to select the highlighted profile and return to the network menu.



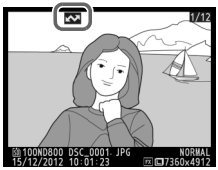
The profile name will be displayed in green when a connection is established.



2 View pictures.

Press the ▶ button to view pictures. Display the first picture to be sent full frame or highlight it in the thumbnail list.

3 Upload pictures.

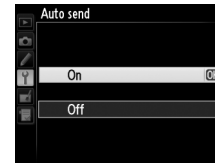


Press ⓞ. A white transfer icon will appear on the picture and upload will begin immediately. The transfer icon turns green during upload, and turns blue when upload is complete. Additional pictures will be uploaded in the order selected.

To upload a picture that has already been uploaded once, press ⓞ once to remove the blue transfer icon, and then press ⓞ and the center of the multi selector again to mark the image with a white transfer icon.

Uploading New Photographs as They Are Taken

To upload new photographs as they are taken, select **On** for **Network** > **Options** > **Auto send** in the setup menu (📖87).



Interrupting Transmission/Removing Transfer Marking

To cancel transmission of images marked with white or green transfer icons, select the images during playback and press ⓚ. The transfer icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off
- Selecting **Yes** for **Network** > **Options** > **Deselect all?** (📖88; this option also removes transfer marking from all images)

☑ During Upload

Do not remove the memory card or disconnect the Ethernet cable during upload.

Interval Timer Photography

Shooting will be interrupted if the standby timer expires while interval timer photography is in progress. Choose a long standby time before starting the interval timer.

Loss of Signal

Wireless transmission via the WT-5 may be interrupted if the signal is lost, but can be resumed by turning the camera off and then on again.

Turning the Camera Off

"Send" marking will be saved if the camera or UT-1 is turned off while transmission is in progress. Transmission of images marked with a "send" icon will resume when the camera or UT-1 is turned on.

Transfer Status

During playback, the status of images selected for upload is shown as follows:

: "Send"

Images that have been selected for upload are marked with a white icon.

: "Sending"

A green icon is displayed during upload.

: "Sent"

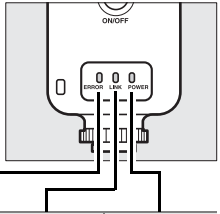
Images that have been uploaded successfully are marked with a blue icon.

Network Status

The status of the link between the host and the UT-1 is shown by the status LEDs and by the display in the top level of the network menu.

The Status LEDs

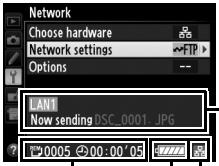
The **POWER** LED lights when the UT-1 is on. Signal quality is shown by the **LINK** LED: the faster the LED flashes, the better the signal and the faster data can be transmitted. The **ERROR** LED flashes to show that an error has occurred.



Status	ERROR	LINK	POWER
UT-1 off	● (off)	● (off)	● (off)
USB cable not connected	● (off)	● (off)	○ (on)
Connecting to host	● (off)	○ (on)	○ (on)
Waiting to send or sending data	● (off)	☼ (flashes)	○ (on)
Connection error	☼ (flashes)	● (off)	○ (on)
UT-1 hardware or battery malfunction	☼ (flashes)	☼ (flashes)	☼ (flashes)

The Status Display

Network status can also be viewed in the top level of the network menu.



Status area: The status of the connection to the host. The host name is displayed in green when a connection is established. While files are being transferred, the status display shows "Now sending" followed by the name of the file being sent. Any errors that occur during transfer are also displayed here (🕮112).

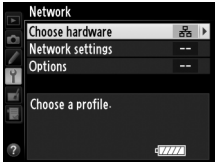
REM, 🕘: The estimated time required to send the remaining images.

Battery level: A five-level display showing the charge state of the battery in the UT-1.

Signal strength: Wireless signal strength. Ethernet connections are shown by 🖧.

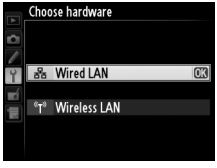
Menu Guide

This section describes the settings available for the **Network** option in the camera setup menu when the UT-1 is connected.



Choose Hardware

Choose the hardware used to connect to the network: Ethernet (**Wired LAN**) or wireless LAN (**Wireless LAN**).

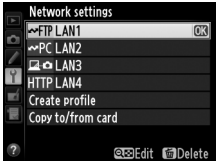


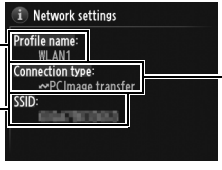
Network Settings

Highlight **Network settings** and press ▶ to display the network profiles list, where you can create new profiles or select an existing profile.

The Profile List

The camera can store up to nine network profiles. Highlight a profile and press ▶ to connect to the highlighted host computer or ftp server, or press 🗑 (FORMAT) to delete the highlighted profile (📖83). To view information on the highlighted profile, press (?/?).





Profile name (📖19, 27, 61, 67, 84)

SSID (WT-5 only)

Connection type (📖7)

To edit the highlighted profile, press (?) (📖84).

Create Profile

Choose **Connection wizard** to create network profiles with the help of a wizard (📖18, 26, 60, 66), **Configure manually** to enter ftp and http server settings manually (📖110).

Copy to/from Card

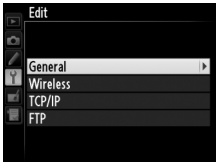
This option is available only with ftp and http server connections. Select **Copy profile from card** to copy profiles from the memory card to the profile list. Selecting **Copy profile to card** displays the camera profile list; highlight a profile and press ⓚ to copy the profile (excluding the encryption key and ftp password) to the card (password-protected profiles can not be copied; 🕮84). If there are two memory cards inserted in the camera, the card in the primary slot will be used for both "copy from" and "copy to" operations.

Deleting Network Profiles

Press 🗑 (FORMAT) to delete the profile currently highlighted in the profile list. A confirmation dialog will be displayed; highlight **Yes** and press ⓚ.

Editing Network Profiles

To edit network profiles, highlight the profile in the profile list, press ⊛, and choose from the following options:



General	Edit the profile name and password (🕮84).
Wireless	Edit wireless settings (wireless connections only; 🕮85).
TCP/IP	Edit TCP/IP settings (🕮86).
FTP	Edit ftp settings (🕮86).

❑ General

Choose **Profile name** to edit the profile name, **Password protection** to enter a profile password and enable or disable password protection. Enabling password protection prevents others from viewing network settings.

☑ Editing Profiles

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost.

❑ Wireless

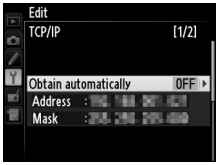
Edit the following wireless settings:

- **SSID (required)**: Enter the name (SSID) of the network on which the host computer or ftp server is located.
- **Communication mode**: Select **Infrastructure** for wireless communication via a wireless network access point, **Ad hoc** if the camera is connected to the ftp server or computer directly.
- **Channel**: Select a channel (ad hoc only; in infrastructure mode, the channel will be selected automatically).
- **Authentication**: The authentication used on the network. Choose from open system, shared key, WPA-PSK, and WPA2-PSK (infrastructure) or open system and shared key (ad hoc).
- **Encryption**: The encryption used on the network. The options available depend on the authentication used:
  Open: None; 64- or 128-bit WEP
  Shared: 64- or 128-bit WEP
  WPA-PSK: TKIP; AES
  WPA2-PSK: AES
- **Encryption key**: If the network uses encryption, enter the network key. The number of characters required depends on the type of key used:

	WEP (64-bit)	WEP (128-bit)	TKIP, AES
Number of characters (ASCII)	5	13	8–63
Number of characters (hex)	10	26	64

- **Key index**: If WEP64 or WEP128 is selected for **Encryption**, choose a key index matching that used by the access point or host computer. A key index is not required when **No encryption** is selected.

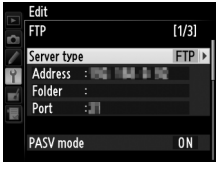
❑ TCP/IP



If the network is configured to supply IP addresses automatically, select **Enable** for **Obtain automatically**. Otherwise select **Disable** and enter the following information:

- **Address/Mask**: Enter an IP address and subnet mask.
- **Gateway**: If the network requires a gateway address, select **Enable** and enter the address supplied by the network administrator.
- **Domain Name Server (DNS)**: If a Domain Name Server exists on the network, select **Enable** and enter the address supplied by the network administrator.

❑ FTP



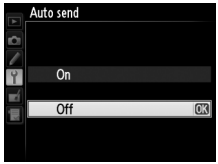
Edit the following ftp settings:

- **Server type**: Choose ftp or sftp and enter the URL or IP address (required), destination folder, and port number.
- **PASV mode**: Select **Enable** to enable PASV mode.
- **Anonymous login**: Select **Enable** for anonymous login, or select **Disable** to supply a **User ID** and **Password**.
- **Proxy server**: If a proxy server is required for ftp, select **Enable** and enter the address and port number for the proxy server.

Options

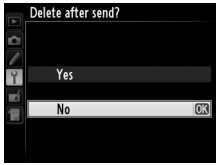
Edit the following settings.

Auto Send



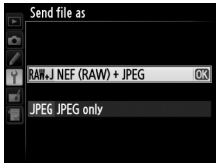
If **On** is selected for image transfer or ftp server connections, photos will automatically be uploaded to the computer or ftp server as they are taken (note, however, that photos can only be taken when a memory card is inserted in the camera). Movies can not be uploaded using this option; transfer movies during playback as described on pages 35 and 75.

Delete After Send?



Select **Yes** to delete photographs from the camera memory card automatically once upload is complete (image transfer and ftp server connections only; files marked for transfer before this option is selected are unaffected). Regardless of the option selected for file number sequence in the camera Custom Settings menu, sequential number is used while this option is in effect, even if the folder changes or the memory card is replaced. Deletion may be suspended during some camera operations.

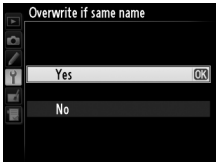
Send File As



When transferring NEF+JPEG images to a computer or ftp server (image transfer and ftp server connections only), choose whether to upload both the NEF (RAW) and JPEG files or only the JPEG copy.

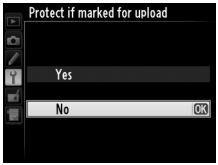
Overwrite If Same Name

Choose **Yes** to overwrite files with duplicate names during upload to an ftp server, **No** to add numbers to the names of newly uploaded files as necessary to prevent existing files being overwritten.



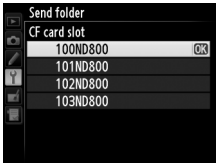
Protect If Marked for Upload

Select **Yes** to automatically protect files marked for upload to an ftp server. Protection is removed as the files are uploaded.



Send Folder

Select a folder for upload (image transfer and ftp server connections only). All photos in the selected folder (including those already marked as "sent") will be uploaded, beginning immediately. Movies can not be uploaded using this option; transfer movies during playback as described on pages 35 and 75.



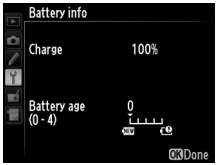
Deselect All?

Select **Yes** to remove transfer marking from all images selected for upload to a computer or ftp server (image transfer and ftp server connections only). Upload of images with a "sending" icon will immediately be terminated.

HTTP User Settings

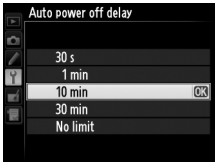
Enter a user name and password for connection to an http server (http server connections only).

Battery Info



Display information for the battery inserted in the UT-1. The five-level **Battery age** display shows the battery age: 0 indicates that battery performance is unimpaired, 4 that the battery has reached the end of its charging life and requires replacement.

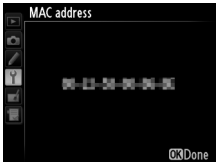
Auto Power off Delay



Choose how long the UT-1 remains on once the USB connection to the camera is terminated.

MAC Address

Display the MAC address of the hardware selected for **Choose hardware** (🕮81).



Firmware Version

View the current UT-1 firmware version.

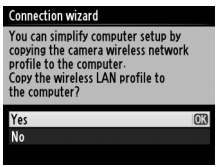
Appendices

Copying Profiles

Camera network profiles can be copied to a computer, which will then automatically be configured for wireless connection (profiles can not be copied over a wireless network in ad hoc mode under Windows 8.1 and OS X).

1 Enable copying.

When the connection wizard prompts you to choose whether to copy the profile to a computer (🕮32), highlight **Yes** and press ▶.


Connection wizard
You can simplify computer setup by copying the camera wireless network profile to the computer.
Copy the wireless LAN profile to the computer?
Yes
OK
No

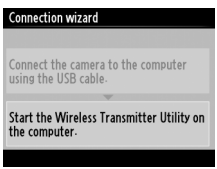
2 Connect the camera to the computer.

When prompted, connect the camera to the computer using the USB cable supplied with the camera.

Connection wizard
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

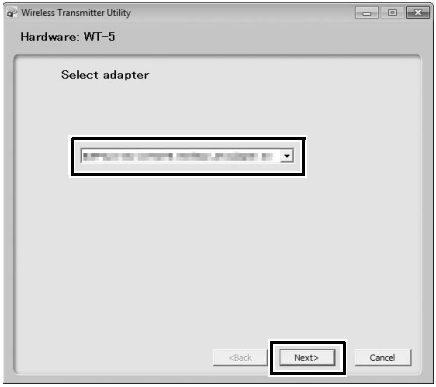
3 Start the Wireless Transmitter Utility.

When prompted, start the copy of the Wireless Transmitter Utility installed on the computer (🕮11).

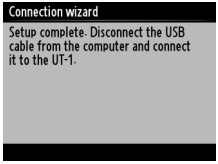

Connection wizard
Connect the camera to the computer using the USB cable.
Start the Wireless Transmitter Utility on the computer.

4 Choose an adapter.

Choose an adapter from the pull-down menu and click **Next**. If **Image transfer** or **Camera control** is selected, the Wireless Transmitter Utility will automatically pair the camera and computer.

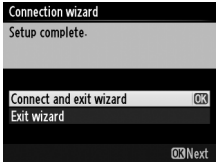


5 Disconnect the camera.



The camera will display the message shown at right when the process is complete. After disconnecting the USB cable from the computer and connecting it to the UT-1, exit the Wireless Transmitter Utility.

The camera will display the options shown at right; choose an option to exit the wizard.



Ad Hoc Mode

The camera will not automatically connect in ad hoc mode. Choose the network profile on the computer before connecting.

Creating Profiles on a Computer

The Wireless Transmitter Utility (🕮11) can be used to create network profiles.

1 Connect the camera.

Start the computer and connect the camera using the supplied USB cable.

2 Turn the camera on.

Rotate the power switch to turn the camera on.

3 Start the Wireless Transmitter Utility.

Double-click the Wireless Transmitter Utility icon on the desktop (Windows) or click the Wireless Transmitter Utility icon in the Dock (OS X).

4 Create a profile.

Follow the on-screen instructions to create a network profile.

Creating an FTP Server

Images can be uploaded to ftp servers created using the standard ftp services included with Windows 8.1, Windows 8.1 Enterprise/ Pro, Windows 7 (Professional/Enterprise/Ultimate), and Windows Vista (Ultimate/Business/Enterprise). Under Windows, Internet Information Services (IIS) are required to configure ftp servers (installation instructions are available from Microsoft).

The following settings are used below for illustrative purposes:

ftp server

IP address: 192.168.1.3
Subnet mask: 255.255.255.0
ftp server port: 21

- Windows 8.1/Windows 7 ..... 🕮95
- Windows Vista ..... 🕮103

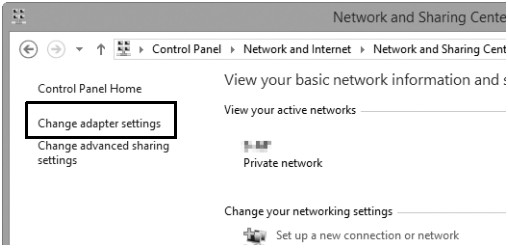
Windows 8.1/Windows 7

1 Go to **Network and Sharing Center**.

Click **Control Panel** > **Network and Internet** > **Network and Sharing Center**.

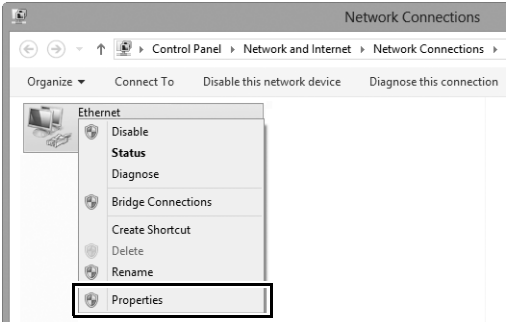
2 Display the network adapter list.

Click **Change adapter settings**.


Network and Sharing Cente
Control Panel ▸ Network and Internet ▸ Network and Sharing Cent
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and
View your active networks
Private network
Change your networking settings
Set up a new connection or network

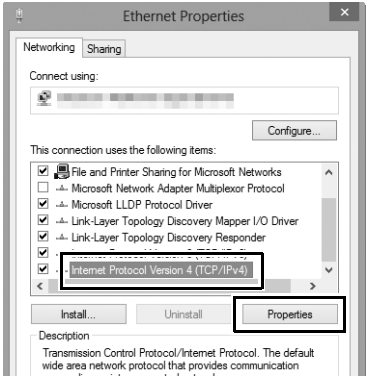
3 Open the network properties dialog.

If you are connecting via a wireless LAN adapter, right-click **Wi-Fi** (Windows 8.1) or **Wireless Network Connection** (Windows 7) and select **Properties**. If you are connecting via Ethernet, right-click **Ethernet** (Windows 8.1) or **Local Area Connection** (Windows 7) and select **Properties**.



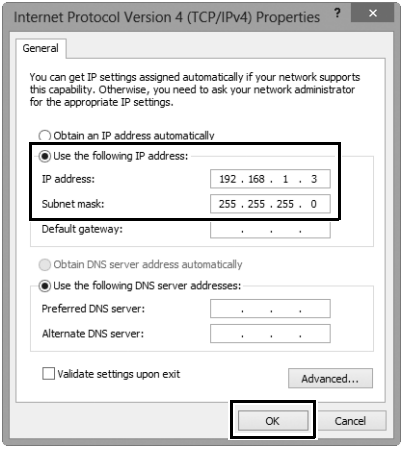
4 Display TCP/IP settings.

Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



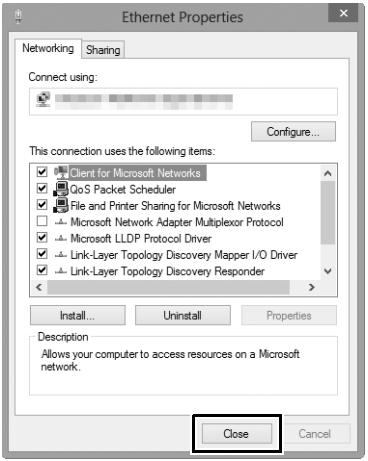
5 Enter an IP address and subnet mask.

Enter an IP address and subnet mask for the ftp server and click **OK**.


Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 3
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

6 Close the network properties dialog.

Click **Close**.

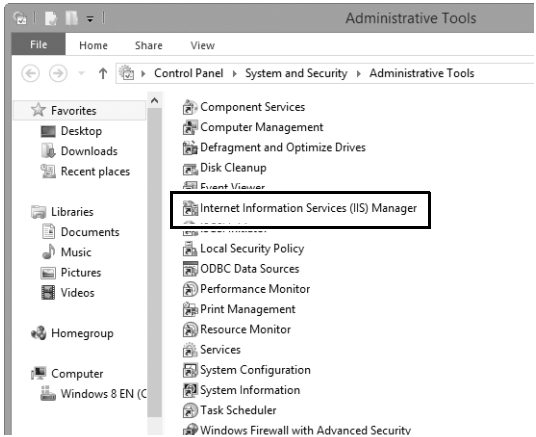


7 Open Administrative Tools.

Click **Control Panel** > **System and Security** > **Administrative Tools**.

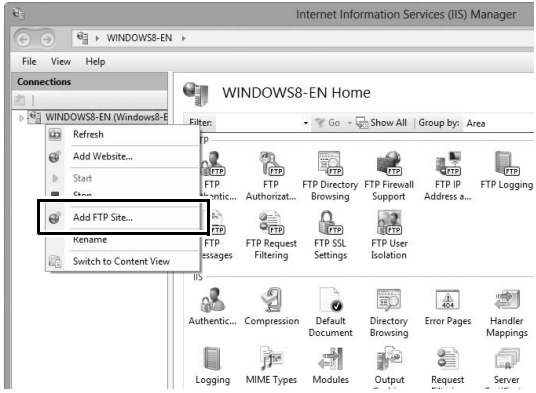
8 Open the IIS manager.

Double-click **Internet Information Services (IIS) Manager**.



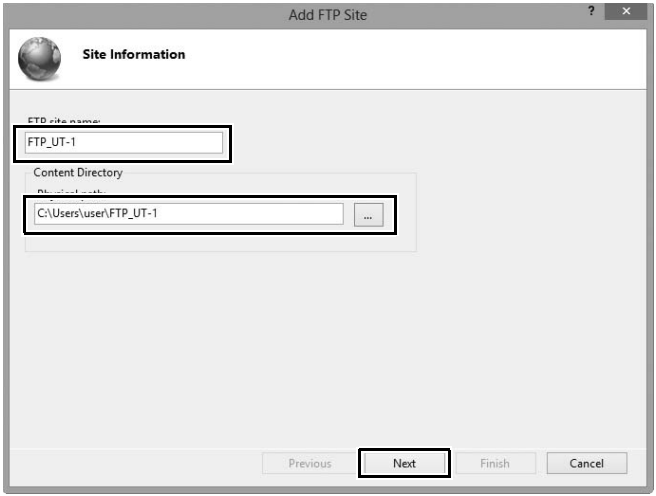
9 Select **Add FTP Site…**

Right-click the computer user name and select **Add FTP Site…**



10 Enter site information.

Name the site and choose the path to the folder that will be used for ftp upload. Click **Next** to proceed.

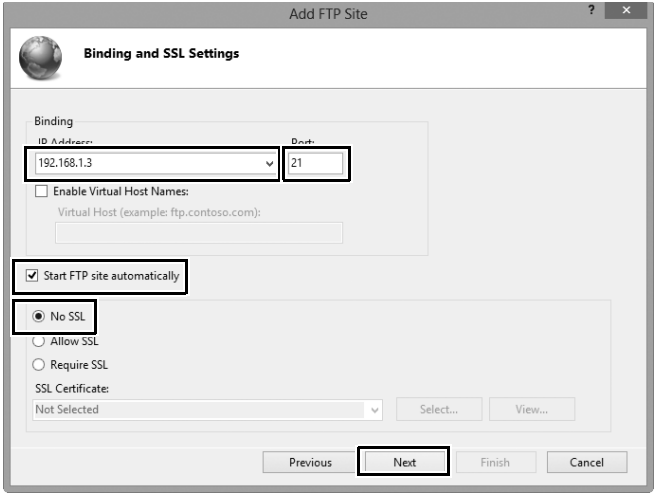


Anonymous Login

To allow anonymous login, select a folder in the user's public folder as the content directory.

11 Choose binding and SSL options.

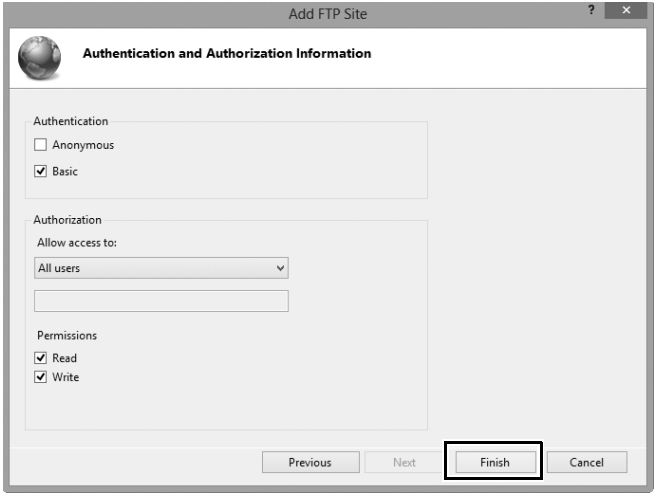
Select the IP address entered in Step 5, note the port number, select **Start FTP site automatically**, and check **No SSL**. Click **Next** to proceed.



12 Choose authentication options.

Adjust settings as described below and click **Finish**.

- **Authentication**: Basic
- **Allow access to**: All users
- **Permissions**: Read/Write



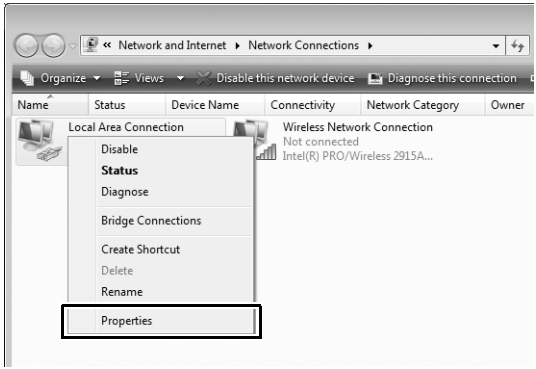
Windows Vista

1 Display network connections.

Click **Start** > **Control Panel** > **Network and Internet Settings** > **Network Connections** > **Manage Network Connections**.

2 Open the network properties dialog.

If you are connecting via Ethernet, right-click **Local Area Connection** and select **Properties**. If connection is via a wireless LAN adapter, select **Properties** in the context menu for **Wireless Network Connection**.

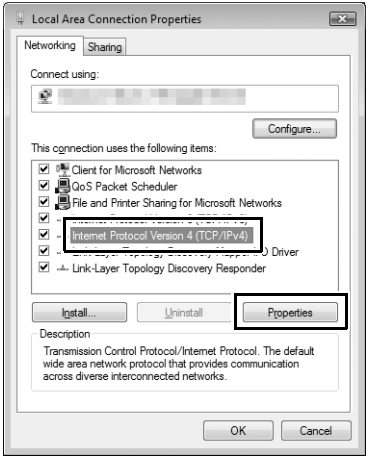


3 Click **Allow**.

A "User Account Control" dialog will be displayed; click **Allow**.

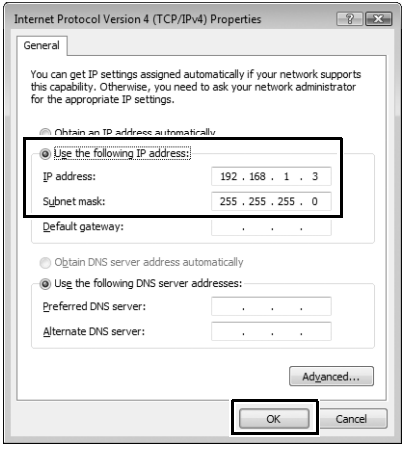
4 Display TCP/IP settings.

Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



5 Enter an IP address and subnet mask.

Enter an IP address and subnet mask for the ftp server and click **OK**.

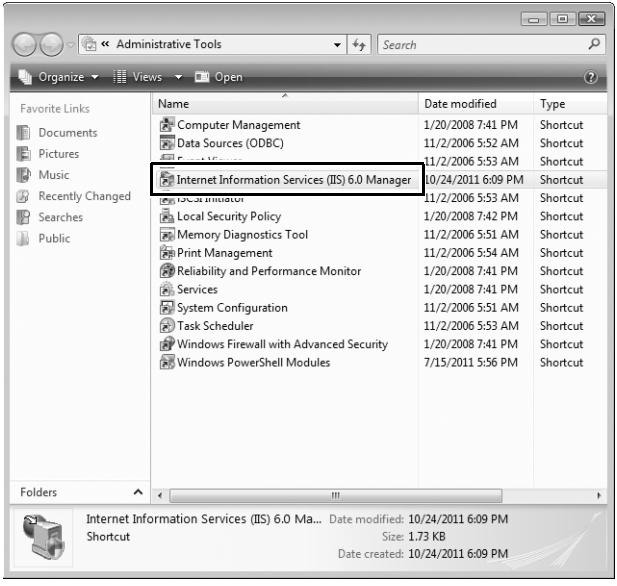

Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 3
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

6 Open Administrative Tools.

Click **Start** > **Control Panel** > **System and Maintenance** > **Administrative Tools**.

7 Open the IIS manager.

Double-click **Internet Information Services (IIS) 6.0 Manager**.

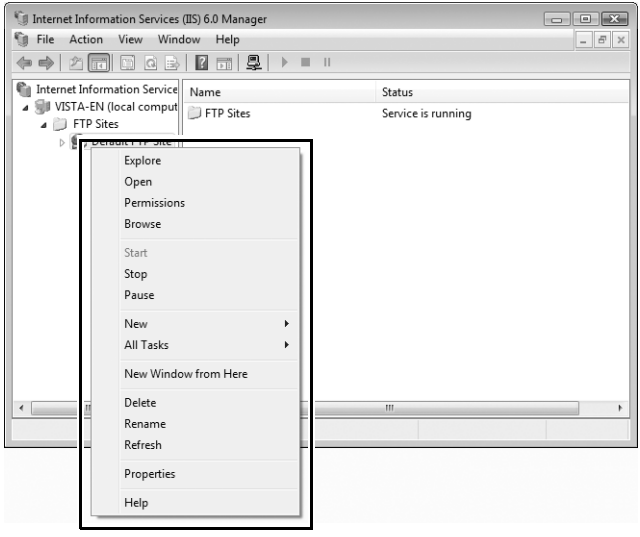


8 Click **Allow**.

A “User Account Control” dialog will be displayed; click **Allow**.

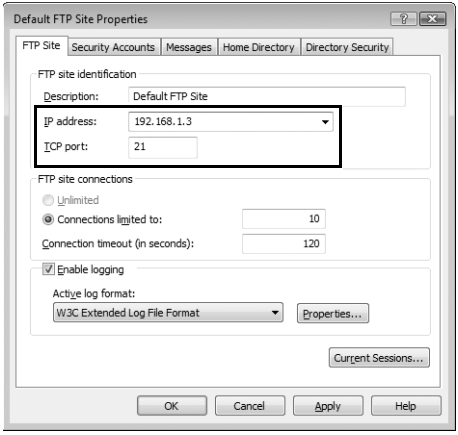
9 Display ftp site properties.

Right-click **Default FTP Site** and select **Properties**.



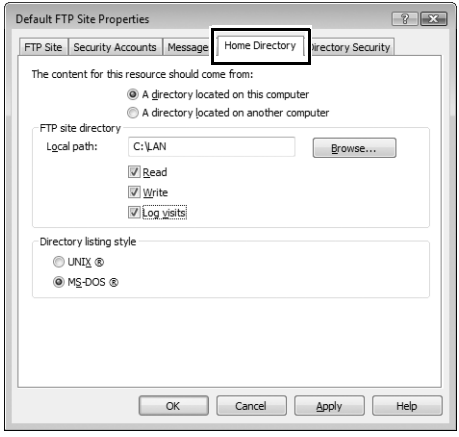
10 Select the address and port number.

Select the IP address entered in Step 5 and enter a **TCP port** number.



11 Choose a home directory.

Open the **Home Directory** tab and select **A directory located on this computer**. The root directory for images uploaded to the ftp server is listed in the **Local path** text box; choose a folder and select **Read**, **Write**, and **Log visits**. Click **OK** to close the properties dialog.



Manual Profile Creation

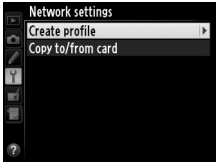
Follow the steps below to manually configure the camera for connection to ftp and http servers. Note that changes to the current profile will be lost if the camera is turned off during setup; to prevent unexpected loss of power, use a fully-charged battery or an optional AC adapter designated for use with your camera. If you are connecting to an ftp server behind a firewall, you may also need to adjust firewall settings to create exceptions for the ftp ports used by the camera (ports 21, 22, and 32768 through 61000).

1 Display network profiles.

In the network menu, highlight **Network settings** and press ▶ to display the profiles list and other network settings.

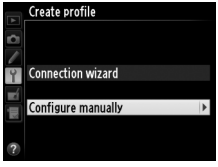
2 Select **Create profile**.

Highlight **Create profile** and press ▶. Note that if the list already contains nine profiles, you will need to delete an existing profile using the 🗑 (FORMAT) button before proceeding (🕮83).



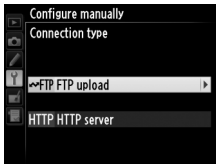
3 Select **Configure manually**.

Highlight **Configure manually** and press ▶.



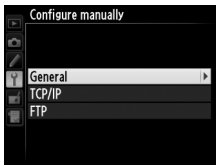
4 Select a connection type.

Highlight **FTP upload** or **HTTP server** and press ▶.



5 Adjust settings.

Adjust settings as described in "Editing Network Profiles" (🕮84).



☑ Editing Profiles

If the shutter-release button is pressed while menus are displayed, the monitor will turn off and any changes to the current profile will be lost. Choose a longer monitor off delay for Custom Setting in the camera menus.

Troubleshooting

Problem	Solution	Page
"POWER" LED does not light.	• Turn the UT-1 on. • Confirm that the battery is inserted and fully charged.	17, 25, 59, 65 9, 89
Network option not available.	Confirm that the UT-1 is connected and on.	17, 25, 59, 65
Excessive radio interference.	Adjust the position of the wireless access point or host computer.	—
All LEDs flash at once.	UT-1 hardware or battery malfunction. Contact a Nikon-authorized service representative.	—
Camera displays TCP/IP or FTP error.	• Check settings for host and/or wireless LAN adapter and adjust camera settings appropriately. • Check firewall settings.	15, 23, 57, 64, 84 8
Camera displays wireless error.	• Confirm that host and wireless LAN adapter are on. • Ensure that there are no obstacles between UT-1 and wireless LAN adapter. • Check settings for host and/or wireless LAN adapter and adjust camera settings appropriately.	— — 23, 64, 84
Camera displays "Ethernet cable is not connected".	Connect Ethernet cable or select **WT-5 (Wireless LAN)** for **Select hardware**.	16, 58, 81
Memory card error displayed.	Confirm that memory card is properly inserted.	—
Transfer interrupted before all photographs are sent.	Transfer will resume if UT-1 is turned off and then on again.	17, 25, 59, 65
USB cable disconnected during transmission.	Reconnect the USB cable. Do not turn the camera off.	—

Specifications

■■ *Communication Unit UT-1*

Ethernet		
	Standards	IEEE 802.3u (100BASE-TX)/IEEE 802.3 (10BASE-T)
	Data rates *	10/100 Mbps with auto detect
	Port	100BASE-TX/10BASE-T (AUTO-MDIX)
Wireless (WT-5)		
	Standards	**WT-5/WT-5A/WT-5B/WT-5C**: 802.11a/b/g/n **WT-5D**: 802.11b/g/n
	Communications protocols	**IEEE802.11a**: OFDM **IEEE802.11g**: OFDM **IEEE802.11b**: DSSS **IEEE802.11n**: OFDM
	Operating frequency (MHz)	**WT-5**: 5,180–5,320 MHz (36/40/44/48/52/56/60/64 ch) 5,500–5,700 MHz (100/104/108/112/116/120/124/128/132/136/140 ch) 2,412–2,472 MHz (1–13 ch) **WT-5A**: 5,180–5,320 MHz (36/40/44/48/52/56/60/64 ch) 5,745–5,825 MHz (149/153/157/161/165 ch) 2,412–2,462 MHz (1–11 ch) **WT-5B**: 5,180–5,320 MHz (36/40/44/48/52/56/60/64 ch) 2,412–2,472 MHz (1–13 ch) **WT-5C**: 5,745–5,825 MHz (149/153/157/161/165 ch) 2,412–2,472 MHz (1–13 ch) **WT-5D**: 2,412–2,462 MHz (1–11 ch)
	Approximate range (line of sight) †	Approximately 180 m (590.5 ft)

Wireless (WT-5)		
	Data rates *	**IEEE 802.11a/g**: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps **IEEE 802.11b**: 1, 2, 5.5 and 11 Mbps **IEEE 802.11n-HT20**: 72 Mbps maximum **IEEE 802.11n-HT40**:150 Mbps maximum
	Security	**Authentication**: Open system, shared key, WPA-PSK, WPA2-PSK **Encryption**: 128/64 bit WEP, TKIP, AES
	Access protocols	Infrastructure, ad hoc
Data transfer protocols		PTP-IP, ftp
Power consumption		Approximately 1.9 W maximum (UT-1 only) Approximately 2.8 W maximum (including WT-5)
Power source		Rechargeable EN-EL15 Li-ion battery ×1 (available separately), EP-5B power connector and EH-5b AC adapter (available separately)
Operating environment		**Temperature**: 0 °C–40 °C (32 °F–131 °F) **Humidity**: 85% or less (no condensation)
Weight		Approximately 205 g/7.2 oz. (including battery)/ Approximately 120 g/4.2 oz. (body only)
Dimensions (W × H × D)		Approximately 57 mm × 114 mm × 46 mm (2.2 in. × 4.5 in. × 1.8 in.)

* Maximum logical data rates according to IEEE standard. Actual rates may differ.

† With large antenna at wireless LAN access point. Range may vary with signal strength and presence or absence of obstacles.

Battery Life

The length of time batteries can be used and the number of shots that can be uploaded before recharging varies with the condition of the batteries, signal strength, and how camera and UT-1 are used. The following measurements were performed using a fully-charged EN-EL15 battery (1,900 mAh) at a temperature of 23 °C (73.4 °F) while continuously uploading images with an average file size of 9 megabytes (equivalent to a large normal-quality JPEG image taken with the D800/D800E) to an ftp server configured using Internet Information Services (IIS) under Windows 8.1 over an infrastructure network with the UT-1 in FTP upload mode (all figures are approximate).

Network	Wireless (802.11n)	Ethernet (100BASE-TX)
No. of shots uploaded	8,000	17,000
Battery life	300 min. (5 hr.)	480 min. (8 hr.)

To ensure maximum battery performance:

- Keep the battery contacts clean. Soiled contacts can reduce battery performance.
- Use EN-EL15 batteries immediately after charging. Batteries will lose their charge if left unused.
- Periodically check the battery level using **Network** > **Options** > **Battery info**.
- The battery level displayed by the camera may vary with changes in temperature.
- A sharp drop in the length of time the battery can hold a charge indicates that the battery must be replaced.

Index

Symbols

: "Send" 38, 78
: "Sending" 38, 78
: "Sent" 38, 78

A

Ad hoc 24, 27, 31, 64, 67, 71
Authentication 85
Auto power off delay 10, 89
Auto send 87

B

Battery info 89

C

Camera control 7, 15, 23, 40
Camera Control Pro 2 40
Channel 85, 113
Choose hardware 18, 26, 60, 66, 81
Communication mode 85
Connection type 7, 82
Connection wizard 18, 26, 60, 66
Copy to/from card 83
Create profile 82

D

Delete after send? 87
Deselect all? 88
Direct connection (ad hoc) 27, 31, 67, 71
DNS 86
Domain Name Server (DNS) 86

E

Encryption 85
Encryption key 85
Errors 112
Ethernet 2, 8, 112
Ethernet cable 16, 58

F

File names 39, 79
Firewall 8
Firmware version 90
Folders 37, 62, 74
FTP server 57, 94, 110
FTP upload 7, 57, 64, 75

G

Gateway 86

H

HTTP server 7, 15, 23, 43, 48, 110
HTTP user settings 89

I

Image transfer 7, 15, 35
Infrastructure 24, 64
IP address 20, 33, 61, 72, 86
iPhone 48, 53

K

Key index 85

M

Mac 48
MAC address 32, 73, 90
Memory card 16, 25, 58, 65, 83
Menus 81
Mode 7

N

Network 81
Network settings 18, 26, 60, 66, 82, 110
Network Status 38, 41, 47, 78

O

Options 87
Overwrite If same name 88

P

Pairing 21
Password protection 84
PASV mode 86
PIN-entry WPS 27, 30, 67, 70
Port number 8, 86, 101, 108, 110
Profile name 82, 84
Protect If marked for upload 88
Proxy server 86
PTP-IP 114
Push-button WPS 27, 29, 67, 69

R

Routers 20

S
Search for wireless network .. 27, 28, 67, 68
Send file as 87
Send folder 88
SSID 28, 31, 68, 71, 82, 85
Status LEDs 2, 38, 41, 47, 78, 112

T
TCP/IP 8, 86
The Shooting Window..... 49, 53
The Viewer Window 51, 54

W
Windows 7 ..... 48, 95
Windows 8.1..... 48, 95
Windows Vista 48, 103
Wireless LAN 85
Wireless LAN access point.24, 28, 64, 68
Wireless Transmitter Utility ... 11, 22, 34, 91, 93

Warranty Terms - Nikon Europe Service Warranty

Dear Nikon Customer,
We thank you for your purchasing this Nikon product. Should your Nikon product require warranty service, please contact the dealer from whom it was purchased or a member of our authorized service network within the sales territory of Nikon Europe BV (Europe/Africa and Russia). In order to avoid any unnecessary inconvenience, we advise you to read the user manuals carefully before contacting the dealer or our authorized service network.

Your Nikon equipment is guaranteed against any manufacturing defects for one full year from the date of original purchase. If during this period of guarantee the product proves defective due to improper material or workmanship, our authorized service network within the sales territory of Nikon Europe BV will, without charge for labor and parts, repair the product in the terms and conditions set as below. Nikon reserves the right (at its sole discretion) to replace or repair the product.

1. This warranty is only provided upon presentation of the completed warranty card and original invoice or purchase receipt indicating the date of purchase, product type and dealer's name, together with the product. Nikon reserves the right to refuse free-of-charge warranty service if the above documents cannot be presented or if the information contained in it is incomplete or illegible.

2. This warranty will not cover:
- necessary maintenance and repair or replacement of parts due to normal wear and tear.
- modifications to upgrade the product from its normal purpose as described in user manuals, without the prior written consent of Nikon.
- transport costs and all risks of transport relating directly or indirectly to the warranty of the products.

- any damage resulting from modifications or adjustments which may be made to the product, without the prior written consent of Nikon, in order to comply with local or national technical standards in force in any other country than the ones for which the product was originally designed and/or manufactured.

3. The warranty will not be applicable in the case of:
- damage caused by misuse including but not limited to failure to use the product for its normal purpose or according to the user instructions on the proper use and maintenance, and to installation or use of the product inconsistent with the safety standards in force in the country where it is used.
- damage caused by accidents including but not limited to lightning, water, fire, misuse or neglect.
- defacing, illegibility or removal of the model or serial number on the product.
- damage resulting from repairs or adjustments which have been conducted by unauthorized service organizations or persons.
- defects in any system into which the product is incorporated or with which it is used.

4. This service warranty does not affect the consumer's statutory rights under applicable national laws in force, nor the consumer's right against the dealer arising from their sales/purchase contract.

Notice: An overview of all authorized Nikon Service Stations can be found online by following this Link (*http://www.europe-nikon.com/service/*).

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Nikon User Support
Visit the site below to register your camera and keep up-to-date with the latest product information. You will find answers to frequently asked questions (FAQs) and can contact us for technical assistance.

http://www.europe-nikon.com/support

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